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Financial Conditions of Gas Companies Dependent Upon Meter Efficiency

R. E. Davis Gives South Central Gas Association Startling Facts About "Cash Register Industry"

R. E. Davis, president of the Reliable Meter Repair Company of Houston, Texas, discussed the meter question from an interresting standpoint in a paper read before the South Central Gas Association rectnly. He said in part:

Speaking of meters and the care of them, it is well to bear in mind that it is much easier to stay out of trouble than to get out of trouble. The mill will never never grind with the water that has passed and a meter will never register the gas that has by-passed. Your cost and profit on the gas that goes unregistered through the meter has gone beyond reclaim and should the meters of a gas company not be given the necessary attention there will be a serious financial condition as the result.

Constant operation is sure to create wear and the gas meter being a mechanical device is no exception and, what is worse, the gas meter invariably registers slow when allowed to remain too long in service. It is not good policy to depend altogether upon bookkeepers and meter readers to detect slow meters, for in many instances a meter falls off so gradually that it will become a loss to the gas company without being detected Further evidence of this is the constant complaint by the consumer that their bill was not as much on their old meter, which meter the gas company found necessary to remove after it became exceedingly slow, or perhaps failed to register at all, and the gas company's loss is not only in gas but the consumers' confidence as well.

It is astonishing to see the number of meters that are brought in for repairs after having become "D. R.," and especially in view of the fact that practically no such meter reaches this stage instantaneously but rather through a course of a few years, starting at 1 per cent and finally fails to register.

Should Not Remain in Operation More Than Four to Six Years

A meter should not remain in service longer than from four to six years, the ordinary consumption within such time will justify the expense of inspection and repairs. Repairs must be made eventually, yet, sad to say, too many gas companies wait until the horse is gone before they lock the barn.

If any gas man who reads this article and wishes to derive direct benefit therefrom, let him go over his meter records, which generally consist of a card system, a card for each meter showing the life or history of same. Select the oldest meters in use, make a test of them with a portable meter—or if only by means of a pilot light attached to outlet of meter, marking and watching test hand on meter. Make sure that it registers at least one complete action of meter. This will give an idea as to the condition of the diaphragms and is a quick and economical test. After going over all the oldest meters in this manner, removing the slow ones, an increase in sales is sure to result, also an increase in complaints against high bills, but this need not be taken seriously as these complaints are on a par with the infant's howl when its bottle is taken away and in the case with the gas company should the bottle not be taken away soon enough there will be no milk left, much less any cream.

Meter System Care Vital

A periodical change in conjunction with diligent effort on the part of all who are in position to check and detect slow meters will enable a company to keep its meter system in the best possible state of efficiency, for it is well to remember that the meters are the scales through which you measure your product and upon the accuracy of which depends your profit. A merchant dependent upon scales would be out of luck trying to do business with his scales against him. A gas company is in the same boat, for surely loss at the meter is failure to collect for delivered goods.

A rule that applies to all is that proper care should be taken of them and this does not only include taking the meter out of service after a certain period of time for inspection and repairs but means that the gas put through the meters should be properly purified to prevent destruction of the leather diaphragm and metal; also means setting meters properly and in sheltered

places, off the floor or ground, and where a dry gas is manufactured see that sufficient oil is kept in the meter to keep the diaphragms oiled.

Handle with Care

Regarding the handling of meters. The interior construction of any meter does not permit of rough handling and instructions against such should be strictly enforced. It is not profitable for small gas companies to maintain a specially constructed vehicle and trained men for handling meters, but at the least there should be arranged a special compartment on the regular work vehicle to eliminate jolting and tumbling about.

A meter should never be inverted; nevertheless, it frequently happens and at the expense of the gas company, for when gummy condensation reaches the upper section of the meter it causes friction on the valves and other working parts and as a consequence the meter will register incorrectly. It is of importance that meters should be capped when taken out of service; it does happen in instances where meters that are removed and not capped will be found stuck when reinstalled. Examination of such meters shows that due to the evaporation of the lighter oils, the valve covers become gummed tight to their seats and the diaphragms bleached. The life of the meter is often cut short through neglect of proper precaution. Though seemingly small these matters will prove their value if adhered to, especially in this day of high cost of operation.

Have Direct Bearing on Dividends

The conditon of gas companys' meters have such a direct bearing upon dividends that it is safe to say that no expense has more of a return than that of a necessary meter repair. Of course, it costs money, and here is where the gas company's manager is somewhat like the dentist's patient who flinches and complains, yet has to admit it is better to stand for repairs than to lose the tooth.

There are syndicates that, in normal times, made a specialty of purchasing bankrupt gas companies, especially such as are owned locally and convert them into a paying proposition by doing little more than overhauling the meter system.

Concerning Prepayment Meters

Concerning prepayment meters, the discussion is often brought up as to whether or not a gas company should use prepay meters. One manager will say it is of advantage because you are sure of your money and are able to secure additional consumers such as are not able or willing to make a deposit. Another manager will say you have to pay more for the meter and it creates additional complaints and repair costs and you can charge no more for the gas registered by it, so there you are—just like the two women, thin and stout, trying to take on and put off, both using the same medicine, both claiming success.

Observation seems to indicate that the prepay meter is more successful with the small company than with the large. Some of the largest companies are abandoning and have stopped using the prepay meter. The reason for this is hard to say. It probably is due to the fact that larger companies, having a lower rate, the cost of meter and maintenance, also complaints, measure up in larger proportion against return revenue on the meter as compared with a company with a larger rate. However, it is wise for a company to make a definite decision because a delicate situation will arise when the time comes for changing over. The customers being accustomed to a prepay meter with no deposit do not take readily to the change and will protest against it.

Origin of Prepay Meter

The prepay meter originated, as I understand, with the idea in the inventor's mind of giving to the gas industry a means of collecting through the installation of a double rate meter such bills as would otherwise be lost, and to this extent the prepay meter is of value. It has also come into practical service as a rent meter, a deduct or auxiliary, as it is variously called, a meter to measure gas off the outlet of the main meter and used in hotels and light housekeeping apartments, etc. This trade is transient and is, therefore, a pay as you enter proposition.

Meter Repairing

The methods used in a repair shop conducted by a gas company for repairing their own meters differ somewhat from a shop where meters from various gas companies are repaired, due to the fact in a gas company's own shop a large percentage of meters received have been in service a short period and after the various tests are made with minor repairs, the meter is ready for further service, whereas in a general shop meters received have usually been in service a sufficient length of time to justify a general overhauling, and as no records are furnished with such meters, it is necessary to strip them completely in order to be certain of their condition when completed.

Classifying Meters

Upon entrance into a company's shop, meters are classified. All that have been in service a sufficient length of time to justify an inspection of diaphragms are sent to the provers for tests, from there to the stripping bench where the top, back plate, valves, register shaft, index, backs and fronts are removed and the diaphragms inspected. If found in good condition they are then oiled with diaphragm oil, heated. Placed inside the diaphragm a more thorough oiling can be given in this manner instead of applying oil from the outside. After being oiled, the meter is tinned, the back and front are replaced, the valves ground, care being taken to take up all lost motion as the meter is being reassembled. The back plate is put in and the packing boxes repacked. The meter is then ready for the leak test. This is accomplished by putting a meter under pressure and submerging it in water. After this test the meter is placed on the pilot test. The register gear is next installed. The meter is then adjusted, topped and painted. Meters requiring new diaphragms are put through the same course as the foregoing, with the exception of being given a caustic soda bath and the installation of new diaphragms.

Meters having been in service not sufficient length of time to justify a general inspection, yet may be leaking through the packing boxes or found to have friction on the valves due to gummy condensation. From such meters the top and back plates are removed, the meter repacked and valves cleaned. Some shops eliminate taking off the plate and cleaning or buffing the valves

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Must Study Subject to Successfully Advertise Gas Business Is His Opinion*

Our Industry Offers Many Fine Talking Points, According to John H. Hartog, Who Tells Some Advantages We Have

For a newcomer in gas circles to tell those who have grown old in the business how to advertise the gas business would be presumption, were it not that in the subject allotted to me, we may put the accent on the word "advertising" rather than on the word "gas." Otherwise, it would be more seemly for a new man to sit at the feet of wiser ones and absorb knowledge, that he too might some day dare to pose as an expert gas man. But the basis of successful advertising is much the same, no matter what line one advertises.

The thing to do is to analyze the article you intend to put before the public. It is very much like a doctor diagnosing a case. The thing to be advertised may be compared with a sick person, for if the person were 100 per cent well he would need no physician and if an article were 100 per cent known, it would need no boosting.

The analysis must diagnose the merits and good qualities of the article, the degree to which the people are aware of same, and the extent to which they ought to be educated.

Merits and Good Qualities

Under the heading of Merits and Good Qualities comes not only the merit of the commodity, but in the case of gas one should particularly play the spotlight on the drawbacks and inconveniences caused by other commodities which gas replaces. As for instance, to speak of gas for heating as "clean" is not enough. To forcibly impress this cleanliness on the public it is necessary to expose the shortcomings of other fuels without mercy and yet without exaggeration. As a matter of fact, there is not much danger of exaggeration, for who could exaggerate the belching smoke, the greasy soot, and the flying ashes of most hard fuels? Here indeed is a field so fertile for advertising material that nothing but an irrigated alfalfa ranch in California can beat it as a source of continual harvest. Then there is the cheapness of gas compared with the present high cost of fuel; the cash investment for fuel, paid in toto and in advance, as compared with the pay-as-you-go system of gas. Then there is the question of labor, a very important item forsooth. And if the world is drifting towards bolshevism and the servant is going to be the master, it behooves everybody to anticipate the event and install all the labor saving devices before that time is inaugurated, so they won't have to tote wood and split rails, shovel coal and lug ashes for their new bosses.

Strong Talking Points

Whether one does one's own work or hires it done, the total absence of labor in gas-heating systems is a tremendous talking point. Then there is the never failing supply. When a blizzard or snowstorm ties up transportation, it is time for the gas booster to flop his wings and crow real loud, for little does the gas consumer worry about transportation of fuel.

Last, but not least, there is the fact that one should advertise his commodity and not himself. It may be very flattering to the company to see its name in print, but where there is only one gas company in a district, it is the height of folly induced either by ignorance or by vanity, to play up the company's name and thus put out the warning: "don't read this." It is as effective to prevent people from perusing your advertisement as the railroad sign that warns you that you are approaching its crossing. Who, except the proofreader, reads public service advertisements of his own free will? The ad must be made alluring so that he who runs will read, and that he who skims over the headings to get the news of the day will involuntarily pause long enough to peruse the ad. Now if the ad plays up the company name big, hardly anyone will take time to see what the company has to say. But if you play up some item which is apropos, or something that is catchy or appeals, the eye is taken captive and the reader digests the contents of the ad in spite of his hurry or his antipathy to public service items.

What appeals to the eye most of all? A pictorial representation. Not a sketch which is manifestly artificial, but a photograph taken from life. What do people talk most about? Just listen to the conversation at table, in the street car, at a party, on the corner, yes, any place you wish to select. You will find that almost all conversation has to do with "people." People interest people. Therefore picture people and every reader will pause and mentally investigate what the picture means. What kind of people? Not children, for they interest principally young mothers. Not men, but women, for a woman's picture attracts its own, as well as the opposite sex. Then tell your story in as few words as possible. Mendelssohn's "*Lieder ohne Worte*" (Songs without Words) has spoken to more souls than perhaps any other composition.

The Unpardonable Sin

The unpardonable sin in advertising by any public service corporation is that indulged in by those good souls who are "too busy" to compose an ad, or too "short-sighted" to engage an advertiser for the purpose, and pay for costly space to publish the words "Compliments of So-and-so Gas & Electric Company." Unpardonable, why? Because the opportunity to get value received for the money invested, and advertise something, is deliberately cast away. Because instead of making the advertiser more beloved, more popular

*Paper read before Pacific Coast Gas Association.

(as he fondly imagines) it antagonizes the public. We don't want to feel that our public service corporations have so much money that they throw it to the birds, nor that they are wasting their money, be it plentiful or not, nor that they run their business in a lazy or slipshod manner, nor do we want them to spend part of what we contribute to "buy" the good-will of any publication. That smacks too much of the old days of cheap politics and subsidized aldermen. We admire the energy of our public service corporations if they push their wares in up-to-date manner, but we invariably revolt against the idea that they have to "buy" their friendships and support.

Let service to the public be the creator of friendly feeling, and above all let courtesy on the part of every one connected with the corporation win the public. True, it is hard to smile under abuse, to be sweet under accusations, which often border on absurdity, but that is the very essence of Christianity, and the more an employee practises forbearance and love to his neighbor the better a man he will thereby become; the nearer he will approach to perfection.

There is an unaccountable feeling on the part of the outsider that the company carees not. There is an innate conviction on the part of the insider that he, as a cog in the big wheel called the corporation, is doing his level best to please and serve the public. When these two convictions meet, they clash. When the outsider accuses the insider of indifference to the public's needs, it hurts. He is apt to say to himself, "What's the use?" But then is the very time when it pays to advertise one's manliness in not rebelling at unjust accusations, but to convert a knocker into a friend.

How Much Does Public Know?

The second part of the diagnosis is: In how far is the public aware of the merits of a company and its commodities? The men whose shoulders bear the cares and tremendous burdens of production and supply, with their thousand and one intricate details and vexatious problems, may not realize in how far the public is aware of the merits of the company, its product or its appliances, because of the nature of their confining duties. To realize continually how little the public knows about gas and gas uses, one has to mix daily with the public. It isn't at all necessary to buy people cigars or carouse with them, but one should continually aim to remain in touch with the people and be always ready to say a good word for gas and for the company, without ever making his business a bore to his fellow men.

And finally, the extent to which the public can be educated. This is essentially the task for an optimist. The man who can set a high goal must be a fellow bubbling over with good health and happy spirit, for it will take enthusiasm every day of the year for him to hold high the goal he is aiming at. Disappointments will come across his path, and some evening he may close his desk with a cloud covering his high hopes, but the right kind of a man will see the morning sunshine pierce and dispel the cloud and he will tackle his task with renewed courage and never say die.

To advertise the gas business, therefore, one should study the subject, keep close to the public and love his work, love it for its possibilities, love it for itself and for the sake of success.

Gas Piping for New Dwelling Houses in Great Britain

By T. SINGTON

It has been stated in the papers that several million dwelling houses are required in the United States; in Great Britain there is also a shortage on a smaller scale, a mere three-quarters of a million are asked for and no doubt the public would be satified with a much smaller number. Instructions for builders in Great Britain have been prepared to guide them in the details of the gas piping of the smaller type of houses containing six rooms, but they would be applicable for houses of a considerably larger type. Some details may both interest and assist readers. The first point which arises in the case of dwelling houses to be lighted by, and possibly also heated by, gas is at what stage of the construction should the piping be placed in position.

The so-called carcassing should be effected as soon as the buildings are roofed and before the internal plastering is commenced, that would provide for the gas supply with the least subsequent disturbance of the walls, floors and ceilings and would keep down cost.

To construct walls, partitions and floors and then as soon as they have been completed to break holes through them for gas pipes and then repair and make good, is in these days of dear labor a mistake and a very costly one.

By carcassing with piping at an early stage that is saved.

Each house, or in the case of tenements each flat, or group of rooms, should have its own one-inch service pipe, laid to the meter, which should be left exposed as far as possible after it enters the house; throughout its length from the meter to the main there should be a fall.

The position of the meter is an important one, especially as the majority are what are known as "Penny in the slot meters." The meter should be placed as near as possible to the point at which the service pipe enters the house; it is frequently placed in the corner of the front room, so as to be easily accessible from either the front or back entrances. The prepayment meters should be fixed at a convenient height. In many houses with the staircase abutting on the front wall, the meter is placed under the stairs in a cupboard, which can be kept locked.

Builders are cautioned against using wooden meter shelves. Iron brackets are more desirable. The former are frequent vermin harborers. Alternatively a concrete slab may be used.

The meters for cottages are of three sizes—five, ten and twenty light meters.

The gas lighting and heating may be subdivided into sections (a) for cooking and washing and hot water; (b) for heating and lighting the dwelling rooms; (c) heating and lighting the bedrooms.

In the kitchen or adjoining scullery there are generally a gas cooker, a copper for washing and a water heater for the hot water supply for the sink, bath, and so on.

The outlet from the meter should commence with a one-inch iron barrel continuing of that size to the front branch, which should be formed of a 1x¾x¾-in.

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Gas Becoming the Almost General Fuel for Japanning

W. J. Hampton Offers Various Suggestions Toward Securing Such Business, and Discusses Conveyor Type Oven

Japanning consists roughly of three operations, according to W. J. Hampton, of Detroit, in an American Gas Association industrial fuel paper.

There are two methods of cleaning in general use in this city. The first and commonest way is by dipping the work in a hot soda solution, rinsing it in boiling water and allowing it to dry in the atmosphere. The other method is by passing the work through a flame or a hot chamber and burning off the dirt and oil which has accumulated on it in the previous operations of its manufacture. The former method is employed with work of large size and with work requiring a high finish; the latter when parts are small or when the shape of the piece would make the drying difficult.

When the piece has been thoroughly cleaned and dried, the japan is applied. This, in general practice, is done by dipping or by spraying. The shape of some pieces necessitates the use of a tumbling barrel while some have to be done with a brush by hand. The opinions of manufacturers differ as to whether the dipping tank or the spray is the most practical and efficient method of application. When dipped the work must be hung over dripping boards and allowed to drain. Lack of floor space sometimes demands a method wherein the draining room is eliminated. Jobbing shops as a rule dip their work.

Spraying the Japan

In spraying the enamel is applied to the work through a nozzle in which the liquid is dissipated by pressure to a fine mist. The operator uses the spray in somewhat the same manner that he would use a brush. Excess vapors are carried off through the exhausters in the side of the spray brush opposite the operator. When the spray is used the enamel is applied in such a thin coat that it can usually be placed in the oven immediately afterward. Many manufacturers in this city are using spray equipment.

Drying or Baking the Japan Coat

After the application of the japan the coat may be either air dried or baked. When air dried it must be suspended in a dust-proof chamber for from one to eight days, the time of drying depending upon the type of japan enamel used. If the piece requires a gloss coat this operation must be repeated. It can readily be seen that japanning shops using this antiquated method could not long compete with shops turning out oven work of a superior quality in from forty-five minutes to one hour's time.

The construction of the baking ovens varies from the simple, box shaped, sheet iron shell to the highly developed, well insulated and correctly vented oven. It may be equipped with racks or shelves; the work may be introduced and withdrawn from the baking compartment by trucks upon which it is hung; or the installation may be of the latest type of conveyor oven.

The ovens in the smaller shops are interesting as a whole chiefly because of their variety in construction. Their one and common point, it seems, is the fact that nearly all of them are gas fired. The work japanned in the jobbing shops, consists mainly of automobile fenders and hoods, but many small parts, top braces, windshield holders and miscellaneous pieces are japanned by them for the automobile trade.

The heating equipment in nearly all of these ovens consists of pipe burners and atmospheric mixers. It has been our experience that a properly designed pipe burner will give the most satisfactory results. Its cost is low and its upkeep is negligible. When the ovens to be heated are large it is advisable to use gas at boosted pressures. Gas at from one-half to one pound pressure will allow of a more flexible heat control with increased operating speed. With "increased production" the goal of the factory managers, it is important that working heats be reached quickly. The ovens may have to be rushed and with boosted pressures it is possible to do so. The indirect type of oven with high-pressure gas can be forced safely but the ordinary direct-fired oven requires more careful attention in the time the temperature is being brought up to working heat. This type of oven is the highest development in the stationary type, but for modern methods of production the conveyor oven is filling a need in a most satisfactory manner. In this oven the various operations are co-ordinated and waste motion reduced to a minimum.

When an oven is operating normally, bakes are made in from forty to fifty-five minutes, the time depending upon the character of the work and the composition of the japan. Baking heats vary from 410 to 550 deg. Fahr. in ovens of the common design.

We have in this city many conveyor ovens of various sizes, doing many different kinds of work. It is interesting to note that electric oven makers contended for a long time that conveyor ovens could not be successfully operated with gas. The ovens of this kind now in constant use entirely discredit this assertion.

The Detroit Vapor Stove Company of this city have recently built and are now using a conveyor oven unique in many particulars. This firm manufactures oil stoves; their production averages 500 stoves per day. Their japanning oven consists of three conveyor ovens, one of which is 75 ft. in length, one 70 ft. long and the newest one 100 ft. long. The 75-ft. oven is equipped with a conveyor belt which carries the work from the unassembled pieces, through the complete assembling process, spray booth, japanning oven, inspection and deposits the completed stove on the shipping-room platform. The 70-ft. oven is very similar in construction. These two ovens were used in lifeboat construction during the war, the entire assembled boat passing through the oven.

The new oven is so different from the ordinary conveyor type that I believe its description is warranted here.

This oven is only 33 in. wide inside by 67 in. high

The first 40-ft. section of this oven is separated from the last 60 ft. by a space of about 20 ft. in which two spray booths are built, faced in opposite directions. These booths are equipped with De Vilbis Aeron Sprays, the fumes from each of which are exhausted by four fans which vent through vertical flues to the roof.

The system is equipped with a link belt which travels at the rate of 100 ft. in 35 minutes. Upon this belt the stove is assembled. It passes then through the first 40 ft. of the oven in which a temperature of 550 deg. Fahr. is maintained. In this section the oil and dirt is burned off. It passes through this section in about 14 minutes. Passing then through the spray booths, the first operator sprays the enamel on one side of the stove; the second operator finishes it by spraying the other side. The stove goes from the sprays directly into and through the oven in about 20 minutes. A heat of 475 deg. Fahr. is maintained over almost the entire length of this oven.

When the work emerges the stove burners are installed, the fuel tank is filled and attached, the burners are lighted, tested and adjusted before the stove is taken from the carrier.

The 10-ft. burners of the type mentioned before furnished the heat for both the heating and baking sections of the oven. They are placed end to end in a single row which runs through the center of the oven. The gas passes through a 17-in. mixing tube and an elbow, into the burners themselves. The mixers are placed at the side of the oven in groups of two, are fed through a common feed pipe in which the gas flow is controlled by a Robert Shaw thermostat.

Gas is furnished to these burners and to the other ovens by means of one No. 50 and one No. 35 Connersville booster tied into a common feed line.

The oven is insulated on top, sides and bottom with panels of Johns-Manville Sponge Felt 3 in. in thickness. This is said to be entirely satisfactory and is giving as good results as the 4-in. slabs of magnesia insulation on the other ovens.

In conclusion, I would like to emphasize this point. Japanning can be rushed only up to the point just short of turning out tacky work and in the finest sort of high-grade work quality, of course, is the first consideration. For this work the conveyor oven has no particular advantage. For the general run of work, however, the conveyor oven has many advantages over the stationary type, all tending toward the point of maximum production. We have changed over and replaced many stationary type ovens always with more satisfactory results and find that the performance of the conveyor type is a weighty factor for good in a sales argument.

If your manufacturers require japanned parts, they most certainly should have gas-fired japan ovens. Your installations are limited only by the number of factories requiring japanned material. We do not think of bread baking as a difficult operation, nor do we consider it hard business to secure. It is no less ordinary than japanning and of the two we can always be more certain of getting the japanning business. Judging from the number of gas burners we have built recently for a large oven manufacturer, I feel quite sure that other gas companies are getting their share of this business. This condition should not cause us to stand still in the development of ovens and equipment. Frankly, there is plenty of room for improvement along these lines. I personally find that the oven manufacturers are grateful for any assistance we may render in the designing of burner equipment and I do believe that we should make efforts to co-operate with them. It is the finest sort of a place to start effective co-operation and you will find yourselves more in touch with what is going on in way of competitive design and the number of such installations.

Natural Gas Man Has to Face Many Distributing Problems, Says Macbeth

In Paper Read Before Pacific Coast Gas Association, He Compares Difficulties to Those of Artificial Gas Manufacturer

After natural gas is produced and turned into the system of collecting lines it passes under its own pressure to a compressor station and in order to prevent sand, water or oil from getting into the compressors, scrubbers or traps are installed on the intake lines at the compressor station, A. B. Macbeth stated in a paper before the Pacific Coast Gas Association.

The gas pressure from different wells or from different groups of wells varies in all gas fields, and in order to lose no natural pressure that exists, separate lines are used to transport to compressor stations gas of different pressures. These lines do not dump into a general intake manifold, but run to individual or groups of compressors. The low-pressure compressors in our large station pump gas from intake pressure, varying from 20 to 60 lb., up to 130 lb., and deliver it after forcing in through the cooler, into the intake lines of the high-pressure units, then these high-pressure units pump this gas, together with such high-pressure gas as is being received at the station, up to 410 lb. After compression the gas is at a high temperature, and in order to cool it, the discharge lines pass through a water pond.

The compression of natural gas does not present any very different problems from those with which most of you are familiar in your artificial gas practice, except that we compress to much higher pressures and use large gas engine units in place of steam.

The transmission of natural gas has been chiefly through steel pipe lines with rubber gasket couplings. It is not practical to lay screw lines in large sizes and keep them gas tight. Where the gas is dry, the rubber couplers have proved efficient and make it possible to lay pipe lines cheaply and quickly. Where gas contains oil vapors, the rubber gaskets disintegrate rapidly, and it is necessary to use gaskets of a material especially adapted to the kind of gas to be transported. Asbestos gaskets have been used, but have not proven serviceable, as they soon become dry and hard and allow gas to escape. Gaskets made of "Paranite," a patent material, do not deteriorate when exposed to gasoline vapors, but certain of these "Paranites" swell up when so exposed, and if later on the gas becomes dry, they shrink and cause enormous leakage.

So far I do not think any gasket has been manufactured that can be relied upon to withstand the different kinds of natural gas to which it may be exposed.

We are now welding our pipe lines, and while we have not built a welded line larger than 10 in. we are convinced that this is the only practical way of building

a gas transmission line with any certainty of avoiding leakage.

For several years we have successfully operated a welded 8-in. line, fourteen miles long, and have just put in use twenty-two miles of 10-in line which is working satisfactorily in every way.

Determining Unaccounted For

In order to determine daily the amount of unaccounted for gas on a transmission line, it is most important that the gas be accurately measured at the compressor station and at all points where gas is taken off and delivered into distribution systems. Orifice meters with proper size discs have proved efficient for this service

It is good policy, also, in a long transmission line, to install orifice meters in different sections of the line, say approximately every thirty miles, in order to determine in case of an increase in the unaccounted for gas the section in which the leak is located.

The laying of high-pressure lines through cities or thickly populated districts should be avoided. At all city limits regulator stations should be installed with vents to the air, so as to prevent high pressures which accumulate during the time of small demand from getting through into the distributing systems or into the low-pressure transmission lines in such cities.

The distribution of natural gas in itself is much more simple than the distribution of artificial gas. As a general rule, there is no condensation and no need of drip pots in main systems, and of course no naphthalene or tar to stop mains and services. However, no distributing system should ever be installed without grading all pipes and putting in drips at low points; for at times water will get into a gas main system, and if drips are not available it is extremely difficult to get the water out of the mains and service pipes. Natural gas systems have been installed in some cities where this has not been done, and when it became necessary to return to artificial gas all the mains had to be relaid.

Natural gas turned into a distribution system formerly supplying artificial gas usually causes much trouble, and invariably there is a large increase in leakage. In two systems which have come under my personal observation, the leakage increased to over 70 per cent of the gas delivered into them. One of the causes for this is that natural gas cleans out all tar, lamp black, naphthalene and other deposits from the artificial gas, and exposes innumerable small openings through which there is leakage.

Natural gas has been known to dry up the grease in yarn used to make lead and cement joints in cast-iron mains. The yarn had been the means of keeping such joints from leaking while artificial gas was distributed, but after natural gas was turned on it leaked through this dried out yarn.

Usually Has Little Odor

Natural gas usually has very little odor, and leaks are not easily perceptible, so leakage from natural gas mains is a greater source of danger from explosions. The danger of asphyxiation is less, on account of natural gas containing practically no carbon monoxide.

Rubber tubing for the connection of gas appliances should not be allowed, and all appliances which are used for heating, in order to prevent the products of combustion from filling the house, should be connected with flues.

Consumers' Meters

A new meter installed and used only for natural gas should, and does, operate over a longer period of time more accurately than one used for artificial gas, but meters which have been used for the measurement of artificial gas and then have natural gas transmitted through them have caused enormous expense and loss of revenue. In some cases the hydrocarbon vapors in the artificial gas have driven the oil out of the leather diaphragms, and when dry natural gas was turned on these diaphragms have dried up and become like pieces of paper which eventually cracked and caused the meters to stop registering. This can be overcome by placing oil in the bottom of the meters themselves so that the diaphragms are partially immersed in it. This method is much cheaper than to renew diaphragms but, of course, it must be done before they have become so dry and hard as to crack.

Kind of Appliances to Use

In the past the appliances in which natural gas has been burned have proved to be most uneconomical. It was formerly supposed necessary to have a solid top on every natural gas range, with the burners set a few inches below. This required a large flame in order to cook. Also, gas burners installed in ranges and house furnaces built to use coal have all proved to be gas wasters. The ordinary artificial gas cooking range, with adjustable burners, is the best and most efficient for natural gas, and a furnace built for gas and gas only will cut heating bills in two.

The great problem in the distribution of natural gas is inability to control peak demands and yet sell the gas. Natural gas rates in the past have been so fixed that the large domestic consumer using gas for all his heating in the winter time has had the lowest rate, whereas such a consumer's requirements vary with the weather and, all things considered, it costs more to supply him than smaller consumers whose use is more contant. Block rates on heating gas, in place of blocking downward, should be blocked upward. In other words, a consumer who uses large quantities of gas for heating should pay a higher rate than the consumer who uses gas continuously throughout the year in an amount which varies little from day to day.

In any climate except one which is very mild in winter it is unwise for natural gas companies to install rates which run out of the market all other fuels for domestic use. Rates should be charged high enough to make it possible for other fuels to compete.

Columbia Gas Earnings

Based on earnings for the first ten months of the year, Columbia Gas & Electric should show a balance for its common stock for the full twelve months of 1920 equal to at least $10 a share, or double the amount necessary to pay the $5 dividend. In the ten months ended Oct. 31, net earnings of $3,870,000, were 60 per cent ahead of those in the corresponding period of 1919. Increased oil business has been responsible for much of the improvement in earnings, but the public utility end of the business has been showing greater profits. Operating income from this source was 20 per cent larger in the twelve months ended Oct. 31 than in the preceding year.

Gas Piping for New Dwelling Houses in Great Britain

(*Continued from page 508.*)

tee. From one three-quarter-inch outlet of this tee an extension in three-quarter-inch iron barrel should be carried to supply the cooker, copper (or wash boiler) and the water heater.

Tees should be inserted and a half-inch point left in a convenient position for each of them. The other three-quarter-inch outlet should then be extended to supply the heating and lighting points.

Gas fires in place of coal-burning grates are being provided in the dwelling room, parlor and in at least two of every three bedrooms of each house. Supply pipes of half inch internal diameter should be taken to each fireplace, each terminated with an elbow (sometimes called a truce), looking upwards and plugged. The pipes rising or dropping to bracket positions should preferably be three-eighth-inch bore; for bedrooms one-quarter inch should suffice. At the bottom of every upright pipe a tee should be fixed.

Rust, dirt and possibly water may collect there; one end of the tee will be plugged and that provides a means for the pipe to be cleaned.

Should an elbow be placed at the bottom of the upright pipe it could not be cleaned, except by cutting the pipe away and soldering a new length into it.

Cottages are not usually provided with a pendant or bracket in the entrance lobby, for the simple reason that it would never be used if there, but should one be fixed a 30 c.p. burner would suffice. Both the living room and parlor should have an 80 c.p. burner in a central pendant. Should the parlor be small, a 60 c.p. burner would suffice. For the bedrooms, scullery and bathroom, 30 c.p. burners in a wall bracket would satisfy tenants.

In dwelling houses inverted burners are now preferred, consequently it is necessary for brackets to be fixed somewhat higher than has been customary heretofore. It follows that the elbow on the vertical pipe should be at least six feet, or slightly more above the floor, so as to be in the most convenient position. It is essential that the elbow to which the bracket is to be fixed must be square into the room, also that the elbow and vertical pipe are securely plugged to the wall. In rooms to be lighted by pendants, the drop pieces of three-eighth-inch barrel must always be brought at least an inch below the finished ceiling lever, otherwise it would be impossible to fix the pendant without damaging the ceiling: one of those small points, which may save a good deal of useless labor, if provided for during the first stage of the gas-supply fittings. It is also desirable to provide small screwed down traps over the gas fire points at the fireplaces, as well as over the pendant points for the rooms below, so that the subsequent work of connecting the equipment, or of making good possible defects may be carried out expeditiously and without damaging the floor.

It frequently happens in careless work, that the gas fire points end several feet short of the hearth during the first stage, or carcassing; that should never be allowed, as at a later stage of the work they would have to be extended. They should in the first instance be laid their full length, but care must be taken that they are not buried beneath the hearth. To prevent trouble when the houses are tenanted it is essential that care should be taken, that all piping and fittings are in sound condition.

To quote an expert: It will cost very considerably more especially with wages at their present high level, to trace and take out a split, or damaged length, bend or other fitting, or one that has some obstruction in it, than it does to make sure all are in sound condition before, while and after they have been fixed. Leaks frequently occur due to sheer carelessness and many could be prevented by ordinary diligence and intelligence; thus the sockets, or couplers should be taken off every length of barrel and removed, but before the latter is done the thread on the barrel must be painted. Should this painting be omitted a leak may develop, involving time, trouble and expense to trace and make good. Timbers carrying floors or roofs should never be cut for the passage of gas piping. Should it be absolutely necessary, bearing timbers should be cut and weakened to the least possible extent. The cut should only be barely large enough for the pipe, with nothing to spare. When the gas piping is being laid in a dwelling, it is not unusual to find the pendant points over, say, the parlors and dwelling rooms finished with an elbow turned downwards; that is direct evidence of careless and thoughtless workmanship. A tee should always be substituted for the elbow; a short length of barrel should be inserted in the unrequired end of the tee and carried across the next adjoining floor joist, or bearer, that would provide a support for the pendant to be suspended below; the outer end of this short length of piping should be plugged.

It is important that the most convenient positions should be selected for the rising or vertical lengths of gas piping; that should be done from the plans before the buildings are commenced and not left to the discretion of the plumber, who may never have seen the plans. Obviously any neglect to observe this simple but important precaution may result in difficulties and unavoidable cost. Elbows in the laying of gas pipes for heating and lighting should never be used where bends can be substituted.

When the carcassing or gas pipe laying in a dwelling has been completed, all the points should be plugged, to enable a severe test for soundness to be carried out. The low-pressure gas usually provided by certain authorities or gas companies does not exceed a four or five inch column of water; it is therefore desirable to test the carcass piping under an air pressure above that limit, to discover any weak points. The testing pressure should be considerably higher than any possible gas pressure, as weak spots may occur which do not disclose themselves at once, but which reveal themselves after some use.

An expert suggests the following test: Carcass gas pipes should be subjected to a six-inch pressure registered by a column of water in a U-tube gauge. An ordinary U-shaped pressure gauge registering inches of water is fixed to one of the points. The pressure of air is then raised inside the pipes by means of a cycle pump until the gauge reads six inches. The gauge is then carefully watched. Should there be no indication of a change after fifteen minutes, it may be assumed that the piping has stood the test, but should the pressure fall there must be a leak; when it has been located and made good, the test must be repeated.

Coal Shortage Brings Gas to Front in English Coal Problem

Industry Turns to Gas as Means of Continuing Operation When Threatened with Shutdown

Just recently quite a lot of attention has been given to the fuel problem and restrictions contingent upon the coal strike have once again impressed a sense of responsibility upon those who are charged with the task of increasing output and most effectively handling the problem of transport, distribution, and consumption. Coal is a great national asset. Its former plenitude doubtless engendered extravagance in its use. Its present curtailment imposes a severe handicap on industry, especially those phases which cannot quickly adjust themselves to the utilization of alternative fuels which research has long indicated and modern developments are producing in increasing quantities.

The lesser dependence upon raw coal gives a measure of security in times of coal restrictions. The experience of times of restrictions. The experiences of times of emergency should bear fruits even in times when no restrictions are necessary, and it is safe to say that at least some of the more progressive spirits in industry are imbued with a sense of effort in the direction of fuel conservation, even if only for their own immediate ends. A threatened reduction of 50 per cent is a serious matter for many industries, and a return to pre-war conditions does not come within range of mental vision. We are undoubtedly entering upon an epoch of change in our methods of fuel utilization, and the future depends largely upon the wisdom of the methods now selected as the basis for subsequent work. Industry, public utility, and domestic services are seriously concerned in these changes. With the newer methods involved and applied, national progress in a large degree is bound up. Power as the primary essential of industrial production must be provided at the lowest cost and with a minimum drain upon national resources. Alternative methods of power production need to be weighed in the accurate balance of wide and exact experience before being selected for almost universal development. And the selection, too, will involve such a balance of conditions as will economically utilize every possible product of the raw coal and rigidly avoid any waste. Alternative schemes have for some time been before the public, and developments are now proceeding along lines not altogether anticipated so recently as a few years back.

Of these developments the use of coke as a substitute for coal in steam raising provides a good illustration. Recent experience has shown that coke may replace coal to the extent of as much as 75 per cent in steam raising, and curiously enough these advances have mainly been made in electrical power stations. With modern prices the cost of electrical power raising is largely—to the extent of 75 to 80 per cent—due to fuel. Industrial progress must not be measured by coal consumption but rather by output in relation to coal consumption. The development of the gas industry was in 1913 handicapped somewhat by the slump in price and accumulations of coke at London and provincial gas works. The possibility of coke had then not been fully demonstrated. Now the results achieved at large power stations have increased the interest in and demand for what was once slightly referred to as "coal from which all goodness has been extracted at the gas works. Modern coke-burning appliances have increased the thermal efficiencies of boiler operations and freed the attendants from the unwelcome attention of smoke inspectors. Difficulties always attached to the efficient combustion of coal in hand-fired boilers with smoke production on the one hand and undue excesses on the other. Coal combustion is a two-stage process demanding very close attention. The burning of coke is a single-stage operation with more uniform conditions. Again, chain grate stokers designed for bituminous coal and quite unsuitable for coke, but with some adaptation can be made to operate efficiently on mixtures of coke and slack containing as much as 75 per cent of the former and quite an inferior quality of the latter material.

This "sandwich" system is now a permanent feature of some of the largest power stations in London, and three or four works only partially equipped for the system are already consuming over 100,000 tons of coke per annum. At the Greenwich power station 25,000 tons of coke and breeze were used in the year 1919-20, resulting in a saving of about £8,000 a year in fuel.

Gas as an Industrial Fuel

The remarkable progress of gas as an industrial fuel as clearly evidenced in a return of the consumption of gas for this purpose in a manufacturing center in Birmingham. From 1913 to 1918 town gas was used for industrial heating increased from 609,000,000 cu. ft., or 6.66 per cent of the city's total supply, to 2,680,000,000, or 20.92 per cent. Due mainly to the falling off in the manufacture of munitions, the figure stands at 1,910,000,000 at present, or 15.9 per cent. In Sheffield the gas committee has recently installed seventy-three furnaces with an approximate consumption of 27,895 cu. ft. per hour. Gas as one of the three main products of carbonization, and the thermal efficiency of gas works, practice may be taken as from 70 to 75 per cent. In the domestic fire gas 75 per cent of the heat utilized, and thus the combined efficiency of the gas works, and gas fire aproximates to 50 per cent against 13 per cent for electrical heating and 25 per cent for the open coal grate.

The thermal efficiency of industrial gas furnaces, too, is high. The conversion of 35,000,000 tons of domestic coal to gas and other products would simultaneously yield 390,000 tons of ammonium sulphate, 350,000,000 gal. of tar, 46,900 tons of cyanogen blue, and 214,000 tons of sulphur, while the very large amount of gas available would effectively supply heat for almost every conceivable purpose. It is not yet easy to see exactly the lines along which coal conservation will be mainly effected, but the gas industry supplies an answer to the problem which, if not entirely complete, at any rate goes a long way towards a solution. The application of the method to some or all of the large amount of coal used industrially for steam raising opens up wide possibilities by the use of both gaseous and solid products for steam raising or even by gas alone from a total gasification process. That an all-round economy of coal would result is without doubt, thus lengthening the life of the available reserves proved and computed but other problems are simultaneously solved. Much diminished labor and cost of transportation and distribution, a purer atmosphere with increased sunlight and more hygienic conditions, and great measure of perma-

nence to buildings which at present suffer so sorely from the corrosive attack of acids resulting from the direct combustion of coal—these and other good things. notably the over-all need for less coal—are within reach.

On the subject of oil from coal, it is impossible to state definitely the best treatment for coal to attain the greatest value in oil and tars. To a large extent the day of solid fuel is passing away. Other sources of energy must be opened out. For heat units electrical generation and transmission does not exceed about 10 per cent efficiency. Even assuming a 20 per cent figure, an 80 per cent loss is unthinkable as a coming proposition on a large scale coupled as it is with the total loss of all by-products. As restrictions of transport and labor attached to the use of solid fuels and the disposal of ashes will soon militate against their common use, alternative fuels will be found in gas and oil.

As regards oil, home production from Scotch shales has produced as much as 60,000,000 gal. of oils per annum, and while processe sfor the increased production of oil from coal are only slowly coming into operation, a quicker extension of the shale oil industry is likely to be affected by the more immediate development of the shale industry in Norfolk.

Financial Conditions of Gas Companies Dependent Upon Meter Efficiency, Says Expert

(*Continued from page* 506.)

in such meters by merely plugging two holes in the outlet side of meter in line with the valves and inserting a fifty-fifty mixture of hydrocarbon and lubricating oils which dissolves the heavy condensation on the valves at the same time it lubricates them.

Cast-Iron and Tin Meters

If there was no difference of opinion there would be no two kinds of meters, and the following remarks are made with the intention of bringing out the good and bad points of both. A person might as wlel try to dictate to a young couple on marriage as to dictate which is the better meter. Both sides are firm in their own idea, and anxious to offer proof. However, experience is a reliable teacher and permits the correct decision to be made in the end. The cast-iron meter lasts indefinitely, a tin meter will not. A cast-iron meter can be repaired at a lower cost than a tin meter. yet a cast-iron meter needs repairing more frequently than a tin meter, due to the fact that a tin meter's diaphragm is strongest where the action is most severe; that is, at the point where the leather goes on to the tin ring, one part of it remaining stationary while the other is in operation. In other words, a hinge is formed at this junction and the construction of a tin meter's diaphragm is such as to be tucked at this point, which acts as a reinforcement. It is also a fact that where the condensed moisture of gas comes in contact with cast-iron an acid is formed which is detrimental to leather. Evidence of this is the fact that it is not a rare case for the diaphragms of a tin meter to hold for ten or fifteen and as high as twenty years, whereas with the cast-iron meter such life for a diaphragm would be exceptionally rare, and although it is perfectly safe to use either meter, attention should be given them accordingly.

Diaphragm Most Important Part

The most important part of the meter is the diaphragm. Upon this piece of leather the gas company depends for the correct measurement of its gas. It is well for a gas man to know what constitutes a good diaphragm, how to keep it in good condition, what is injurious to it, etc. Bark tanned leather is essential. The oil used for oiling it should be of such a nature as to render it pliable, yet not to injure same by an acid content. Proper aging is also necessary. A gas not sufficiently purified is detrimental to the leather. Also a gas that does not carry a sufficient amount of oily condensation should be taken notice of. It seems strange to say, although it is a fact, that a meter in perfect condition with the exception of dry diaphragms can register fast yet not register a good sized pilot due to the gas passing through the pores of the leather when only a small amount of gas is being used and when a larger quantity is consumed bringing the entire diaphragm into action, the stiff shrunk condition hinders perfect inflation, causing the meter to deliver less than the required amount of gas per stroke of the diaphragm. This condition will not last long, however, before the diaphragm will collapse. Then the meter will register slow in first, second and high; mostly in high, as this is the speed the consumer runs in after this condition takes place.

Should Use Dipping System

The dipping system should be resorted to where diaphragms have a tendency to become dry. Additional protection against wear may be afforded diaphragms placed in old-type meters where they touch the sides, top and bottom of meter case by shellacking a piece of leather to case at the point where diaphragms touch, pieces of discarded diaphragms being used for this purpose. Numerous other shop wrinkles may be mentioned and brought up for discussion and the meter question gone into further, including meter testing, construction, meter reading, station meters, etc. However, the object of this paper is merely to discuss the meter at random, so to speak, and mostly to inspire a closer relation between the manager and his meters, that he might be as fair to himself as to others. Of the seventeen years spent in the meter business in various parts of the country, I have yet the first time to be approached by a manager or other official with any suggestion unfair to the consumer. I have on the other hand found every conceivable means of fraud practised on meters brought in from service.

Business Has Wonderful Foundation

The gas business, though not in a very healthy state at present, has a wonderful foundation, that of being the foremost necessity, and will adjust itself to where it will pay a fair return on the investment and afford just compensation for those connected with it. Any one having chosen the gas business for a profession, and would quit it now, the time he is needed most, is a slacker. So let each member of the South Central fulfill his obligation to do something worth while that his association may prove its metal and show its power as an asset to one of the oldest industries in the world.

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As the Journal Views It

Change in B.t.u. Standard

From different sections of the country reports are received daily of increases in rates that have been granted, but in most cases the question of the B.t.u. standard that is to be enforced when the new rates take effect seems to be neglected. Efforts should be made by everyone connected with the gas industry to secure a lower and more economical B.t.u. standard, for the question must be settled eventually and unless the question is thoroughly discussed and driven home to the consumers there is going to be another fight which could be avoided.

The gas industry has always prided itself on its efficiency, and to maintain this efficiency it is necessary, according to the opinion of experts, that a marked reduction take place in the B.t.u. standard. If this problem, which is so technical, is explained so that the man in the street can understand it, then the opposition to a reduction is going to be reduced and public opinion will back up a move that primarily is for the greater good.

The American Gas Association has compiled data that can be of real service to any company, and the facts contained therein should be secured direct from the association. It is authoritative in every way and has been prepared by experts who have spent considerable time and money in gathering it. We are sure that not only is this information available but also that any problem that may arise along these lines can be referred to the association to the benefit of a member company. But it is necessary that action be taken at once.

Gas Problem in Politics

There undoubtedly will be a great deal of activity in various State legislatures during the coming months dealing with the gas industry. In many rate cases the courts, in filing an opinion allowing a rate increase, have declared that the matter of statutory rates should be referred to the Legislature and new laws passed. Now, just how is this situation going to be met by gas companies? Are we to be forced to send to State capitals representatives of companies, who will endeavor to explain just why higher rates are necessary, and who will be branded as lobbyists?

The AMERICAN GAS ENGINEERING JOURNAL is of the opinion that this is the wrong method to pursue. There is no good reason why gas companies should be made to play politics in order to secure justice, but that seems to be just what is looming ahead. There is a better way, however, than hanging around legislative bodies. In place of carrying on the fight with politicians and office-holders, who are bound to be more or less biased in their opinions, it would be much better to go to the people direct and explain the situation. There is not a representative sitting in any law-making body who will dare to act contrary to what his constituents desire; and, after all, the gas industry is only seeking fair play and justice.

The situation seems to come back to educating the public, which undoubtedly is a cure-all for the ills of our field. Get the people that you serve to express themselves in a positive way, and you can rest assured that confiscatory and unconstitutional laws will not be passed. In the long run it is cheaper to take the fight to the people in the first place, because it means that gas companies have appealed to the court of last resort and from their decision there is no appeal.

It is the intention of the AMERICAN GAS ENGINEERING JOURNAL to keep in close touch with the political feeling as expressed in the passage of laws in all parts of the United States, and this journal can be depended upon to help fight for the good of all. But we emphatically advise against a company entering politics, not only for the result to that individual enterprise but also because of the effect upon the whole industry.

Gas Men Oppose Immigration Restriction

Gas men generally are greatly interested in the bill introduced during the past ten days in Washington which would restrict immigration for the next three years, for this industry is one that absorbs a large percentage of the foreign-born element which arrives on these shores intent upon carving a future. The passage of this bill automatically would cut off a source of supply of labor that, except for the years of the World War, has been fairly constant.

One of the first and most vital effects of this proposed law would be the maintaining of the present high scale of wage which gas company labor is receiving, and the period of readjustment which is bound to come would be postponed indefinitely.

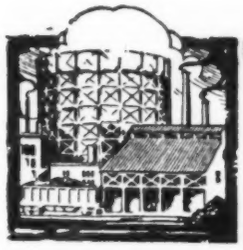
The sponsors of the bill use the argument that the restriction of immigration will serve to remove a certain proportion of the radical element which has been seeking a haven in the United States. There has been no industry that has suffered more at the hands of the so-called red disturbers than has the gas field, but this has been because of the fact that we have not been able to replace them with men who realize their responsibilities to the public. It would seem that this step is being taken after the damage has been done. We already have this element here, and it has been pretty generally proved that we are capable of handling it. Then, again, it is unfair to classify all immigrants as radicals, for there are many who would make good citizens and who would earn their own way.

The AMERICAN GAS ENGINEERING JOURNAL does not believe that any benefit can accrue, either to the country or to our particular industry, through the restriction of immigration. While it is acknowledged that American labor must and should be protected, it is not conceded that it should be placated at the expense of American industry as a whole. There are many problems to be solved during the coming years, and it seems to be foolish to add a labor problem to the rest. Let immigration continue, but police it so that the undesirable element is halted before it enters the country. The bill before Congress should not pass. Let your representative know just how you feel on this subject, for it is of real concern to us all.

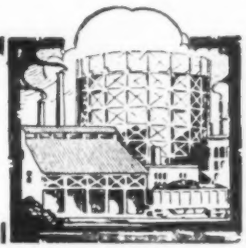
The Meter Question

Attention is called to the article on meters by R. E. Davis which is published in this issue. This article expresses Mr. Davis's own opinions and as such are offered to our readers. Many of the practices that Mr. Davis describes and recommends, it is only fair to point out, are not in accord with the suggestions and recommendations of other authorities on the meter question, but the AMERICAN GAS ENGINEERING JOURNAL feels that Mr. Davis has started a discussion of a subject that should receive wide attention.

There are a great many different opinions on the subject of what is good practice in connection with the meter question and it is hoped that anyone who has any authoritative information on the subject will join in the discussion.



NEWS OF THE GAS INDUSTRY



Gas Administrator Cuts Off 44 Industrial Plants

That southern California is experiencing a gas shortage far more acute than domestic consumers can realize, in view of the measures taken to insure them service from the scant supply, was revealed when H. L. Masser of the State Railroad Commission, recently appointed gas administrator for southern California, announced that of sixty large concerns classed as industrial users, forty-four have been completely shut off from service. The remaining sixteen have been placed on a limited supply, enough only to meet requirements essential to the operation of their plants.

The sixty concerns affected are all on the service lines of the Southern California Gas Company.

In compliance with an order of the commission, the Los Angeles Gas & Electric Corporation, which serves a smaller number of industries, all of which are at present favored with a straight commercial classification, is now reclassifying certain of its consumers.

This is being done with a view to determining which may be entitled to continued service. The remainder will be classed as industrial consumers subject to discontinuance of service, Mr. Masser stated, should occasion require further curtailment in the interest of domestic consumption.

Wisconsin Gas & Electric Associations Plan Joint Meeting in March, 1921

The executive committee of the Wisconsin Gas Association acting in conjunction with a similar committee from the Wisconsin Electrical Association has agreed upon dates for the next annual convention as March 22 and 23, 1921, the first day and the first half of the second day to be occupied by gas business; the afternoon of the second day by a joint convention; while all of March 24 will be taken up by the electrical interests only.

The arrangements for details of the meeting are now in the hands of the committee.

Portland Gas & Coke Going After Laundry Business

The Portland (Ore.) Gas & Coke Company, through its laundry department, is securing a large new line of business which should be of interest to gas companies.

On account of the H. C. L. (which may or may not stand for the high cost of laundering) several of the Portland restaurants have been interested in installing complete laundries of their own, consisting of gas-heated ironers, gas-heated motor-driven washing machines and Gasco driers.

The business is of very much more importance than one would first think. One of the leading restaurants in Portland has a laundry bill of $2,000 a month, washing, among other things, 6,000 napkins a day.

More Than Half of Consolidated $25,000,000 Bond Issue Sold

At the end of last week five-sixths of the $25,000,000 issue of Consolidated Gas Company one year 8 per cent notes had been sold and the momentum was such, according to bankers, as to insure the completion of the sale of the entire issue in a few days.

It is not considered probable that there will be any public offering of the notes, but that they will all be taken by banks.

The purpose of the issue is to provide funds for the retirement of bank loans. Like many other corporations, the position of the company has been affected by the general deflation. Consequently it became necessary for the company to borrow from banks. The reason that no public offering is expected is that the general investing public is more attracted by longer term issues and one-year obligations do not appeal especially to them.

Gas Charter Filed

Certificate of incorporation has been filed at the office of the county clerk by the Rowan Oil & Gas Company, 568 Newark Avenue, Jersey City, with James A. Butler, Sr., as agent. The capital stock of the company is $150,000, of which there are 500 preferred shares of stock, valued at $100 each, and 1,000 shares of common stock of the same value.

The incorporators are Arthur W. Button, Robert K. Thistle and Robert N. Gavelt, all of 65 Cedar Street, New York.

Orders Surcharge to Be Abolished

The Arizona Corporation Commission has ordered the Tucson Gas, Electric Light & Power Company, Tucson, Ariz., to abolish a surcharge for service.

An investigation had been made on the commission's own initiative into the rates, rules and service of the Tucson company with especial reference to the surcharge which the commission had authorized the company to charge by an order issued May 25, 1918. Advices had reached the commission which tended to disturb the estimates presented at the time the former decision was reached, according to the order, and the commission decided to make further investigation.

The commission considered that one matter which might be disposed of at this time was the surcharge applied to minimum bills. It is being evident that the surcharge should not be applied to bills for consumption falling within the minimum quantity, the commission issued its last order.

This order stipulates that the company is directed and required to cease application of any surcharge to bills for gas or electricity when consumption falls within the minimum designated in the company's rate.

Nashville Gas Company Gets 70-Cent Rate Increase

The Nashville (Tenn.) Gas & Heating Company has been allowed an increase of 70 cents per 1,000 cu. ft. of gas in an order handed down by the State Railroad and Public Utilities Commission. The rate allowed by the commission is $1.90 gross and $1.80 net per 1,000 cu. ft. of gas and the consumer and patron shall have the benefit of the net rate of $1.80 during any month provided such consumer or patron pays his or her bill within ten business days from the rendition of the gas bill.

There are conditions that the company reinforce its service in the outlying residential districts so as to furnish an adequate flow of gas at all times. To do this the company is required to use its first available earnings over the investment and shall pay no dividends on any of its stock until the work is completed.

Los Angeles Firm Buys Entire Southern Counties Gas Issue

Girvin & Miller, investment bankers, with offices in Los Angeles, San Francisco, Santa Barbara, Cal., and Seattle, Wash., have purchased outright the issue of $400,000 ten-year 8 per cent convertible collateral trust gold bonds of the Southern Counties Gas Company, which has a very wide field of distribution in most of the cities of southern California.

There is very sound collateral back of these bonds, which are a direct obligation of the Southern Counties Gas Company and are additionally secured by a pledge with the trustee of $525,000 Southern Counties Gas Company of California first mortgage 5½ per cent bonds maturing May 1, 1936. First mortgage bonds are secured by an absolute first mortgage on all the property of the company now owned or hereafter acquired.

Gas Shortage Closes Five West Virginia Plants

Because of a shortage of natural gas five gas plants—the Norwood, the Clarksburg, the Travis and the Tuna and the Akro-Agate Marble—have been forced to suspend operations in Clarksburg, W. Va.

Reports from all parts of West Virginia tell of an acute gas shortage in several industrial centers, due to the first cold spell of the present winter. The gas supply has been inadequate in recent years and when every cold spell comes preference is given the domestic consumers. The plants which suffer the most through curtailment of the gas supply are largely glass factories and if the suspension is in force any considerable length of time a decided curtailment of the output is probable.

Many hand plant factories affiliated with the National Association of Window Glass Manufacturers center in the West Virginia gas belt and practically all the plants in two sections have banked their fires.

Window glass factories are operating on the second period, and owing to war-time restrictions, labor and other operating difficulties of the year, it is predicted that a shortage of glass will occur.

Increased Oil Production

October was a record month for petroleum production in the United States, according to a recent report of the Geological Survey.

A total of 39,835,000 barrels of oil were brought to the surface, an increase of 6,500,000 barrels over Oct., 1919.

There was a slight decrease in oil imports from Mexico and other countries during the month, but a decrease in general consumption as well, so that oil stocks in the country were placed at a figure 500,000 barrels larger on Nov. 1 than on Oct. 1.

Texas produced for the month 9,269,000 barrels, a notable increase over previous records, bringing that State to third place. California, with 9,459,000 barrels, was first, and Oklahoma, with 9,345,000 barrels, second.

Use of Fuel Gas in Bakeries Increasing

The Public Service Company of Northern Illinois, Chicago, reports an increase in the quantity of fuel gas used by bakeries equipped with types of rotary ovens which establishments exist in about all the gas towns in the company's territory. Practically all of them have been started in the last two or three years. Many occupy quarters used as saloons before the enactment of prohibition.

Marked improvements have been made in burners and appliances used in this industry. Some of these, in fact most of them, illustrate the fashion in which American inventive genius rises to the occasion when required. The special adaptability of gas is seen in all the new things.

Pure Oil Company Forms Belgian Subsidiary

The Pure Oil Company, formerly the Ohio Cities Gas Company, has formed a subsidiary, to be known as the Purfina Co-operative Company, with headquarters in Antwerp, to handle its sales in Belgium. The company has a capital of 20,000,000 francs, fully paid in, one-half by the Puritan Oil Company, export subsidiary of the Pure Oil Company, and one-half by the Campagne Financiere Belge de Petroles of Brussels.

The directorate of the new company includes A. Van de Vyvere, Belgian Minister of State; L. De Waele, director of the Guaranty Trust Company in Brussels; F. Carlier, director of the Bank of Antwerp; H. M. Gylsen, director of the Lloyd Royal Belgium Steamship Company; Col. H. Maud, vice-president of the Puritan Oil Company; A. V. Patterson, L. Meens and L. Stux.

The new company will be largely dependent on the Pure Oil Company for its products, as the other associate, Campagne Financiere Belge de Petroles, is not able now to move any products from its oil properties in Roumania.

New Directory and Market Data Book

Crain's Market Data Book and Directory of Class, Trade and Technical Papers, now on the press, promises to be of unusual interest to advertisers generally and users of trade and technical papers in particular. It not only lists all of the business publications of the United States and Canada, giving circulations, rates, type page sizes, closing dates, etc., but supplies a market analysis of each trade, profession and industry. Thus the reader is given the basic facts of each line in which he may be interested, including its buying power, buying methods, character of requirements, etc. The volume, which is bound in cloth and contains nearly 500 pages, is published by G. D. Crain, Jr., 417 South Dearborn Street, Chicago. The price is $5. Orders in advance of publication are being accepted at the rate of $3.75.

Boston Consolidated Gas Company reports output for Nov., 1920, as 604,251,000 cu. ft., an increase of 4.6 per cent over Nov., 1919.

Artistic as Well as Practical Fixtures Exhibited by Welsbach Company at A. G. A. Convention

The stream of visitors which passed through the Welsbach booth at the American Gas Association convention each day found a number of new ideas which will make a strong appeal to the gas user, to the practical mind as well as the aesthetic.

A new commercial semi-indirect light, the Welsbach No. 1612, attracted considerable attention. This is a six-mantle 500-c.p., well built of conventional design. It is a light of handsome and enduring appearance which the company is making in all the various finishes.

Several practical and beautiful combination fixtures for gas and electricity mark the new fulfillment by the Welsbach Company of a long-felt need, especially among combination gas and electric companies. These fixtures showed the Welsbach kinetic burner in semi-direct bowls, combined with harmonious electric drops. Such a fixture places the gas company in a strong position to meet all demands for combination lighting of the best type.

The Welsbach twin thrift light, now ready for the market, was shown for the first time and in a wide variety of fixtures. The practicability of the Welsbach single thrift light was demonstrated in one, two and three candle fixtures. This is a light for which the Welsbach company believes there is a very large field; and its application has been greatly advanced by another innovation.

In decorative mica shades and screens a surprising opportunity for ornamental development has been realized. The Welsbach Company has made up a number, adorned with floral designs and idyllic scenes. To the more practical minded, the mica shade for small lights has the advantage over fabrics in eliminating fire hazard, increasing in illumination and lowering expense.

In the broad selection of wall brackets were several of the Welsbach Company's new one-piece type, which avoids the slip ring by means of a flexible tubing which folds up as the fixture is pressed against the wall. This one-piece fixture permits of greater freedom in the art treatment.

Conventional and period designs were fully represented in the light shown, with finishes to match any architectural trim, antique, old silver, Roman, old gold and various bronze effects.

Rivaling the illumination fixtures in interest were two Welsbach contributions to the gas heater field. The first, the standard five-glower type, is the heater now well known through national advertising. One of these was most attractively set in a Colonial fireplace. Here again the attention given by the Welsbach Company to attractive framing for its exhibits was evident.

The second heater proved to be something brand new in gas heaters, a spot heater for small areas, which can be used on the floor, on the table or as a wall bracket. Standing five feet or more from the concave copper reflector, the visitor felt a shaft of grateful warmth which seemed out of all proportion to the size of the small glowing surface that produced it. This spot heater is not yet in production. Those shown were factory models. This little heater will open up avenues of gas consumption parallel with the present popular type of electric heater but at favorably lower cost.

Certainly visitors left the Welsbach exhibit satisfied that this company has given the gas industry a neat opportunity for developing gas lighting and gas heating on the most modern and artistic basis; and that its advancement in the season of 1920-21 is now in the gas company's hands.

Bond Issue Denied

The application of the Southern Counties Gas Company, Los Angeles, Cal., to issue bonds amounting to $660,500 has been denied by the State Railroad Commission.

WIDE VARIETY OF FIXTURES AND LAMPS DISPLAYED BY WELSBACH COMPANY AT A. G. A. CONVENTION

City of Boston Opposes Gas Increase Petition

In opposing the petition of the Boston Consolidated Gas Company for authority to increase the standard price of its product by 15 cents per 1,000 cu. ft., at the first hearing before the Public Utilities Commission, Corporation Counsel Arthur D. Hill urged that the present was an inappropriate time to establish a standard price.

Mr. Hill said that conditions are abnormal and that action should be deferred until normal conditions again prevail. He contended the company is not now in any financial strait which it cannot solve.

Chairman Attwill of the commission after arguments for and against the petition had been heard, announced that the company will be given a week in which to file requests for rulings upon legal features of the petition.

"The company itself has promised that it would endeavor to hold the price to $1.35, even if the standard price of $1.50 is allowed," attorney Hill said in opposing the petition. "The company wants the increase not for the purpose of immediately increasing the charge to the consumer, but to enable it later, when the present oil contract runs out, for instance, to meet the higher cost of manufacture and also, possibly, to enable it to increase the rate of dividend to 7 per cent or some higher figure."

He declared he did not consider an increase in the rate is necessary to enable the company to obtain credit.

"This company is at the present time undercapitalized," he said. "There is ample security behind its stock. If this company is afraid that it cannot raise the money with which to meet its impending obligations on outstanding notes, all it need do is to offer the investing public an opportunity to buy its stock at 7 per cent. It cannot fairly say it cannot sell its stock, that it cannot refund its obligations, until it has tried.

"So far as the question is concerned of securing authority for an increase now to be ready for a higher price on oil when the oil contract expires, it is time enough to meet that question when it actually arises.

"The real objection to the establishment of a standard price now is that it presupposes a permanency of condition, which every one knows does not exist to-day. As a matter of fact, the standard price has passed with the passage of the ten-year period fixed in the sliding scale act of 1906. The situation is bound to come down now to a question of what the public is willing to allow the company to make in money and to pay for its gas."

Mr. Wrighington, vice-president of the Consolidated, presented the company's case and based his appeal on five main contentions.

First, he said, the company, before the sliding scale was adopted, was paying 8 per cent on its capital stock of $15,000,000.

Mr. Wrighington's second argument was that under the act higher dividends are impossible, at any rate before July 1, 1922, because the margin between the standard price and the selling price may not be translated into dividends until the year after the change is made.

In the third place, Mr. Wrightington said, the company has not been earning even 7 per cent, but has a deficit, for the last six months, of $363,000 and of $284,000 for the last four months.

In the fourth place, Mr. Wrightington relied on the history of the company, which, he thought, showed full consideration for the public.

Finally, Mr. Wrightington declared, the supreme court had held that a company is entitled to a dividend of 8 per cent on the value of its property.

The present rate is $1.35 a thousand cubic feet. Mr. Wrightington said the company intends to keep the price at the same figure, even should the petition be allowed, if expenses can be kept down to the present level. Authority to increase the rate to $1.50 is wanted, he explained, so that the corporation would be in a position to continue paying its present dividends, should operating expenses eat too much into the revenue.

Wakefield Offered Gas at $1.50

President Albert B. Tenney of the Malden & Melrose Gaslight Company has offered to furnish Wakefield, Mass., with gas and electric current at the prices prevailing in neighboring municipalities supplied by the company, or $1.50 net for gas and 11 cents net for electricity. The town's municipal light plant is now charging $2.20 for gas. In addition, Mr. Tenney agrees to purchase the municipal plant at a fair appraised value.

Gas Employees Choose Insurance Policies in Place of Turkey

Employees who have been in its service longer than three months will each receive as a Christmas present from the Public Service Company of Northern Illinois, Chicago, a life insurance policy with the premiums on it paid by the company. This substitute for the usual turkey was made dependent on the choice of the employees as expressed in a general vote and this was begun late last month. The policies, it is hoped, will be ready to deliver to their holders about the first of the year. They range in the amount of the insurance from $500 to $1,500, according to the holder's length of service. More than 1,750 individuals will receive policies.

They are issued under the group insurance plan which subject was brought up at early meetings of the co-operative council and has been investigated by a special committee of the latter. The machinery of the co-operative council was employed to bring the company's offer before employees. A general council of the co-operative council held in Chicago Nov. 19 adopted the committee's report, which recommended the insurance. Then, preliminary to the voting, meetings were held in the districts under direction of the territorial councils. At these, copies of the report of the special committee mentioned were distributed and the careful analysis of group insurance contained therein was amplified by speakers. Thus the nature of the policies was made perfectly clear before balloting started.

The report of the special committee referring to a question which suggests itself says that although no one can read the future correctly, the company hopes and expects to continue the group insurance plan until its equal or something better can be substituted for it.

The cost to the company in premiums and in the preparation of necessary details will equal $24,000 the first year. It is probable, says the special committee's report, that this cost may within a few years reach $30,000.

Additional Equipment for Albion Gas Light Company

The Albion (Mich.) Gas Light Company recently awarded a contract to the U. G. I. Contracting Company of Philadelphia for additional water gas equipment.

Momand Pressure System Being Installed at Wilkes-Barre

It now looks as if the troubles of the Carroll Light Company, Wilkes-Barre, Pa., which has a contract for the lighting of the gas lamps of the city are about over, as far as the lighting of the lamps and the turning off of the same is concerned, which has been a terrific problem for the local company to solve. It has all come about through a new invention whereby all of the lamps can be turned on and turned off at the same time at the gas company plant by simply turning a wheel or lever.

The mechanism is attached to the lamp, and is known as the Momand pressure system. Beneath the gas mantle there is a pilot light, which is kept burning when the lamp is out and extinguished when the light is on. The ignition is caused by simply giving additional pressure at the gas plant, in addition to that provided by the governor, through a round-about circuit.

The old system now in vogue is to light the lamps by hand, the work being done by a man, who is called a lamplighter, and it is his duties also to again extinguish the light, also by hand. The new device which is now being installed in this city does away with the expense of hiring these employees and all that is required by the company will be the renewing of mantles and globes, which is a small problem as compared to hiring lamplighters.

The invention is the product of P. Momand, who is connected with the Carroll Company. It was installed in the city of Boston six years ago, and litigation followed in which a prominent gas concern tried to secure the rights, with the result that five years of litigation followed in the courts, but Mr. Momand was the victor and the system is now all his own, and Wilkes-Barre is now to have this new system installed and it will be the only city in the country for the present to have it.

The Carroll Company officials stated that within sixty days all of the lamps in the city will be equipped with this new system and after they are once installed it is believed that there will be no further complaints, relative to lights being out or failure to extinguish the lights during the day.

Gas Companies Ordering New Equipment in Spite of High Prices

Gas Companies, as a rule, do not realize that they are losing money through definite and avoidable wastes consisting of overtime, excessive repairs, and excessive use of fuels—when they are compelling their plants to get along somehow with wornout and inadequate equipment. They are doing this in hopes that prices of new equipment will drop.

The Western Gas Construction Company, Fort Wayne, Ind., states that prices in Dec., 1920, are probably as low and possibly lower than they will be in the spring of 1921, and that quite a few companies are going ahead with the purchase of new equipment, without waiting for a future drop in prices.

A very up-to-date plant is being installed in Winchester, Ind., to utilize natural gas instead of oil to enrich blue water gas. It is stated that no gas oil will be required as long as there is a supply of natural gas available.

However, the plant has been so designed that oil can be used to manufacture standard carbureted water gas at any time should the pipe lines to this city be broken or frozen up.

Another addition to the well-equipped municipal plant at Rocky Mount, N. C., has been ordered by the board of public works, in this case a No. 5 Roots booster with by-pass, is being installed.

The new eight foot six inch Western water gas set is progressing nicely and the machine will soon be put into operation, greatly relieving the load on the present sets.

A prominent export firm in New York City has placed a contract for two gas holders to be crated for export to the West Indies.

Two Million Feet Added to Louisville Gas Supply

Approximately 2,000,000 ft. of gas a day has been added to Louisville's supply from the Pennagrade fields, officials of the Louisville Gas & Electric Company recently announced.

Newly completed wells are now being connected and the work of drilling additional wells is being rushed.

It is believed that the supply from the fields will be further increased by Dec. 20.

Officials pointed out that although the city is receiving more gas than in previous winters the additional supply will not keep up with the increase in demand.

They declared that the demand for gas has increased 35 per cent since last year, at temperatures from 33 to 37 degrees.

Seattle Will Fight Gas Rate Raise

The city of Seattle, Wash., has announced its determination to fight the increased gas rates in the State supreme court.

Notice of appeal to the State's highest court in the case against the Seattle Lighting Company by which the municipality seeks to prevent a continuation of the rate increase granted by the State Public Service Commission last March and which became effective in April, have been filed in Olympia. The commission approved an increase of $1.25 for a thousand cubic feet of gas to $1.50

Illinois Utility Associations to Hold Joint Meeting

A tentative program of proceedings has been arranged for the annual convention of the Illinois State utility associations to be held in Chicago March next. It will be a joint meeting of the Illinois Gas Association, the Illinois State Electric Association and the Illinois Electric Association. Three days will be consumed in the deliberations at the Sherman House. March 15, the first day, there will be a joint business session in the morning. In the afternoon the three sections will hold technical sessions at which papers will be read and discussed. Practically the same program is fixed on the second day except that in the evening the annual banquet will take place. The morning of the third and last day of the meeting will be devoted to a general discussion of the various problems of public relationship.

It is expected that men well known in the three industries will contribute papers and join in the discussions. Probably the sessions wherein problems of finance, regulation, etc., are dealt with, will be addressed by banking authorities. It is recognized that the convention—the first joint meeting of these three strong associations—is called on to thrash out problems created in the experience of the past few years and knowledge of the fact bids fair to assure a heavy attendance of delegates.

Annual Report of Director, Bureau of Standards

The year has seen the Bureau of Standards of the Department of Commerce organization change from a war-time to a peace basis. Although the armistice began during the period covered by the previous annual report, many investigations inaugurated during the war naturally held over for several months.

During the past year the bureau's co-operation with the industries has been particularly close. The inauguration of new lines of work which was given a great impetus during the war has affected nearly every American industry and the bureau has been able to be of considerable assistance to these manufacturers through the accurate scientific data which it is able to furnish as a result of the bureau's researches.

The testing work carried out during the year has in some cases been slightly less than during the war period but in general the volume of this work has not decreased to any great extent, owing to the fact that while the amount of work for the military departments has been somewhat less, that for the industries has been very much greater. The total number of tests conducted during the year for the Government was 72,398, and the tests conducted for the public numbered 34,501 or a total number of all tests of 106,899.

During the year the bureau's staff comprised 381 statutory employees and 600 engaged in research and investigations specially authorized by Congress. The turnover in personnel during the year was quite large, and this is a problem still demanding solution. For accurate, scientific work, such as that conducted by the bureau, it is essential that stability in the personnel be maintained, and the salaries paid to employees should be commensurate with those obtained in the industries or educational institutions.

The annual conference on weights and measures was held at the bureau from May 24 to May 27, and a number of important questions were discussed. The greatest interest was displayed in the papers presented and in the discussions and debates. Among the subjects of special interest were sales by net weight, standardization of various commodities in package form, and proposed legislation in reference to installation of testing gasoline measuring pumps.

The work in connection with electrolysis and gas engineering has been actively prosecuted and has resulted in very large savings to numerous municipalities. The work of the section devoted to the testing of internal combustion engines has been considerably broadened during the year and now includes, besides work with aircraft engines, various work in connection with automobiles and trucks, which is of great value to manufacturers and users of automobiles.

The manufacture of optical glass for certain of the other Government departments has been carried on with satisfactory results. A large number of standard samples for reference work in laboratories have been issued during the year.

Structural materials work of various kinds has been carried out and the cement inspection, while not so extensive as that necessary during the war, has tended to occupy a great deal of the bureau's attention. The importance of this work is recognized by the other Government departments and the bureau's facilities are often taxed to care for all of the tests presented.

An important investigation to determine the probable reason for the failure of freight car wheels in service has been carried out for several months and it is expected that it will lead to material improvements in the manufacture of such wheels.

The results of the bureau's activities during the year are partly shown in the 106 new publications which have been issued. These publications comprise fifty scientific papers giving results of new scientific researches, thirty-seven technologic papers dealing with practical applications of science in industrial fields and engineering, sixteen circulars containing important compiled technical data of special use to the industries, especially to the scientific and industrial laboratories, and three miscellaneous publications. Current investigations are described in a mimeographed circular known as the Technical News Bulletin, which is issued monthly.

Wisconsin G. & E. Asks New Stock Issue

The Wisconsin Gas & Electric Company has made an application to the Wisconsin Railroad Commission for permission to issue an additional $500,000 worth of preferred stock in the company which will be used to make extensive improvements in the gas plants at Racine, Kenosha and Madison, Wis.

Die Casting Firms Find Gas the Most Practical Fuel

Chicago, Ill., has long been the largest distributing center in the West, because of its geographical location and the effort displayed by its commercial associations and vast industrial organizations.

This constantly increasing movement of large industries to the Chicago district spells new opportunities for the development of the uses of gas for industrial purposes.

Gas has established itself as an industrial fuel and has become indispensable to certain industries, with die casting ranking among the most important. There are now five large firms operating in Chicago who specialize in die casting.

The Doehler Die Casting Company, the Stewart Manufacturing Corporation, the H. G. Saal Company, the Alemite Die Casting & Manufacturing Company—handling general jobbing work. This company has a new plant under construction which will double their present capacity.

The Peoples Gas Light & Coke Company has just added to this list the Burns-Croft Company—a new firm just organized. The industrial department played an important part in selecting the building site and assuring this company of an ample supply of gas.

This impressive development of an industry that has found gas to be the most economical and practical fuel has added to the output of the Peoples Company about 15,000,000 cu. ft. per month.

Municipal Gas Plant Planned for Calexico

The city of Calexico, Cal., is seriously considering the erection of a municipally owned gas generating plant and the laying of networks of mains to cover the present city and future growth. Engineer J. M. Berkeley, of Los Angeles, is preparing plans, specifications and estimates, which will be placed before the council of that city for consideration. The city voted adversely on such a plan about a year ago, but conditions have so changed that the proposition is looked upon with greater favor now.

A plant to accommodate a population of 25,000 is being considered, with gas to be sold at about $2.50 per thousand feet. The present cost would be about $180,000 with prices steadily falling.

Cities Service Co.'s Earnings Increase

Cities Service Company for the month of Nov., 1920, and the eleven months ending Nov. 30, 1920, continued to show large increases in earnings. For Nov., 1920, gross earnings were $1,942,230.60, an increase of $329,149.45 over the corresponding month of 1919. After providing for all expenses, interest charges and dividends on preferred stock the balance for the month applicable to reserves, dividends on the common stock and surplus was $1,329,661.07, an increase of $282,233.48 over Nov., 1919.

For the eleven months ending Nov. 30, 1920, gross earnings were $22,871,546.26, a gain of $4,651,617.72 over the corresponding eleven months of the preceding year. The balance available for reserves, dividends on the common stock and surplus after providing for all expenses, interest and preferred dividends, was $16,179,698.90, a gain of $4,198,784.03 over the eleven months ending Nov. 30, 1919. Gross earnings for the twelve months ending Nov. 30, 1920, were $24,629,168.49, while the balance available for reserves, dividends on common stock and surplus for the twelve months were $17,334,374.15, compared with $13,334,558.94 for twelve months ending Nov. 30, 1919. For the twelve months ending Nov. 30, 1920, requirements for payment of dividends on preferred stock were earned 4.72 times, while the balance for the twelve months available for reserves, dividends on common stock and surplus was equivalent to $43.61 on the common stock outstanding in the hands of the public.

Total surplus and reserves of Cities Service Company on Dec. 10, 1920, were $52,538,987.59.

Gas Employees Celebrate the Opening of New Rest Room

The employees of the New York State Gas & Electric Company, Cortland, N. Y., in appreciation of the efforts of the company in providing comfortable quarters for their stokers while not engaged in pulling fires, celebrated the advent of their new rest room by a chicken dinner. The table was set in front of the new gas branch which will be in operation Dec. 20, and a delightful noon hour was spent.

J. J. Boyle, superintendent, was appointed toastmaster. Mr. Boyle spoke on the past and present working of the plant. He said he was very well pleased with the spirit shown which prompted the men to get together for the dinner and that he felt that it must necessarily result in a great deal of good, as co-operation is the keynote of success.

He thanked the men for their hearty co-operation, and explained to them that only through co-operation of the officials and the men could results be obtained.

J. T. Coleman, charge of plant operation, and J. H. Kane, night supervisor, were present and were well pleased with the cheerfulness of the men.

Best wishes from the New York State Gas & Electric Company.

Seek Higher Gas Rates in Framingham

Officials of the West Boston Gas Company, which furnishes gas to customers in Framingham and Natick, Mass., have asked the Public Utilities Commission to approve a proposed increase of 32 cents per 1,000 cu. ft. to its consumers. The new rates would be $2.12 net in Framingham and $2.22 in Natick. The company was represented by its attorney, B. D. Barker, Frank W. Jennings, manager, and Vincent Goldthwaite, treasurer.

Attorney Barker, although admitting that the company had been allowed an increase on July 1 of this year, claimed that the company at that time had asked for a 15-cent increase and had been awarded only five cents. The rates established in July were $1.80 in Framingham and $1.90 in Natick. Attorney Barker contended that the company is barely "holding its own," and argued that had the 15-cent increase been allowed the company would not have had to come before the department asking for another increase.

This statement was promptly questioned by Representative William J. Nauphen of Natick, representing that town, who asked why the company asked for a 32-cent increase when a 16-cent increase would be sufficient, according to the statement just made by Attorney Barker. The latter replied that the company would have had, in any event, to come before the department, though at a later date, on account of the continued high cost of coal and the increasing cost of oil. The company has a two months' supply of coal on hand, he said, for which it paid $13.50. He predicted that coal will cost between $10 and $11 in 1921, and declared that while the general advance in the cost of living had been 100 per cent since the pre-war period, gas has only advanced 32 per cent. The Natick representative and Edward E. Clark, selectman of Framingham, attacked the company's figures and claimed that the company is seeking to make the cost of manufacturing gas appear higher than the actual cost would be over a long period, and under sharp questioning by Representative Nauphen and Manager Jennings admitted that as a result of a large leak, which occurred in Oct., 700,000 cu. ft. of gas had escaped, which contributed to increasing the cost of manufacture.

At the request of Commissioner Alonzo H. Reed the company officials agreed to furnish a statement of its operating expenses for the five months ending Nov. 30.

Decision was reserved.

Rotarians Visit Gas Plant

The second monthly visitation meeting of the year for the Worcester Rotary Club last week took place last week at the plant of the Worcester Gas Light Company, Worcester, Mass., and proved to be as successful as the first and brought out over 200 Rotarians who lunched in the big coke shed of the plant and were escorted through the plant by ten specially assigned guides who took the club, divided into parties of twenty, through most of the buildings and pointed out in detail the processes by which is furnished a large part of the heat and light of the city.

An attractive luncheon was served in the coke shed by A. A. Brigham and Treasurer Charles A. Fisher found by incoming tickets that there were 203 present. A short business meeting was called to order by President Herbert F. C. Wilson, who asked Judge William T. Forbes of the finance committee to present to the club a proposition, already passed by the council, favoring an increase, in dues. This increase is necessary, according to Judge Forbes, in order that the club may branch out and do various things, the expense of which will be covered by the advance. Among other things it is aimed to again hold the monthly dinners which were a part of the

club's program last year but which were recently discontinued. The matter was tabled for one week.

Rotarians were welcomed to the plant by Clifford E. Paige, manager of the company, who made a brief speech in explanation of the various processes used in the making of gas before the club members began their supervised tour of the plant.

He explained that the plant had equipment for the output of both water gas and coal gas and roughly explained each process. He declared that the present equipment is capable of taking care of the needs of the city for years to come and that the storage capacity in the big holders is sufficient to supply the city for two days if no more gas was made. He called the Worcester plant typical of those in other cities in the country.

Elizabethtown Granted Substantial Rate Increase

Following the decision of the Supreme Court, given by Justice Swayze some months ago, to the effect that present values must control the Public Utilities Commission in fixing rates, the commission has granted a substantial increase in rates to the Elizabethtown Gas Light Company, Elizabethtown, N. J., and its subsidiaries.

Under the decision the base rate of $1.15 per thousand cubic feet is increased to $1.40. The base rate is applicable to the first 100,000 cu. ft. of gas consumed in any month. For the next 100,000 cu. ft. the present rate of 95 cents is increased to $1.20, for the next 100,000 from 90 cents to $1.15, for the next 100,000 from 85 cents to $1.10, and for all consumption in excess of 500,000 cu. ft. from 80 cents to $1.05. The minimum bill is increased by the board from 50 to 65 cents.

The decision also increases from 60 cents to 76 cents the wholesale rate charged by the Elizabethtown Company to its subsidiaries, the Perth Amboy, Cranford, Metuchen and Rahway Gas Light Companies.

The decision of the Supreme Court, resulting in the reopening of the case, disapproved the method pursued by the board in averaging the costs for a period of five years, thereby arriving at an arbitrary valuation, which the court held was not warranted in law.

Grand Rapids Gas Report Shows Profit

The operating statement of the Grand Rapids Gas Light Company, Grand Rapids, Mich., for the month ending Oct. 21, 1920, shows a gross income of $30,177.23.

The company's total operating revenue for the month was $216,236.83 For the period from Jan. 1 to Oct. 31 it was $1,571,564.55. The total earnings from gas for the month were $164,934.15, of which $147,642.75 were commercial earnings, $17,264.40 were industrial earnings and $27 power. Earnings from residuals for the month were $51,302.68.

Operating expenses for the month amount to $186,687.31. They are itemized as follows: Production, $147,270.46; distribution, $8,557.76; commercial, $9,232.03; general, $5,627.06; depreciation, $5,000.00; taxes, $11,000. Operating expenses for the ten months ending Oct. 31 were $1,518,901.68.

The net operating revenue for the month was $29,549.52 and the non-operating revenue $627.71. For the ten months ending Oct. 31 and the operating revenue was $52,662.87 and the non-operating revenue $7,005.76.

The gross income for the month was $30,177.23. For the ten months period it was $59,668.83. Concerning the gross income the company says: "After the payment of interest on the company's bonds and floating debt out of the above gross income there remains a net deficit of approximately $19,000 on the ten months of operation."

U. G. I. Cuts Dividends

The dividend just declared on the $61,029,800 of United Gas Improvement Company common stock, heretofore through many years on an 8 per cent basis, will be at a rate not exceeding 4 per cent at most. Whether the distribution will be 50 cents per share, or less, will be determined by the board having before it a statement, not yet completed and based partly on estimate, to show the results for this year and the probable outcome of the system operations for 1921. Into the latter enters in very material way the Philadelphia gas works proposition, which the city authorities are about to examine into after dragging it along several months.

At 30, on a 4 per cent dividend, United Gas would return 6 2/3 per cent in a market where assured dividend-paying stocks are selling on a 7 to 8 per cent basis. Figuring on operation of the Philadelphia gas works, which is subjecting the company to heavy loss under the lease terms, even with thermal test allowed in place of the original candlepower measure, the management now sees no prospect of being able to buy oil below 11 cents per gallon after the present 5 and 13½ cent contracts run out Feb. 1. It is stated that it is still necessary to pay high premium prices for gas coal, so that far, at least, producing costs are at about top notch.

Whatever may be the outcome of the study of the gas works matter, to be made under the new ordinance of council which Mayor Moore probably will sign shortly, the United Gas management has virtually determined not to continue their operation beyond the termination of the lease at the end of 1927. This makes a proposition for the city to consider very carefully. It will be urged that the problem should be met, first by abolishing the candlepower test for the balance of the lease period; second, that on showing of costs now an emergency rate for gas should be established to pay the cash rental to the city, such rate to be subject to adjustments in accordance with changing costs, and third, that the city should approach the proposition seeing in the gas works a chief municipal asset, the value of which depends upon continued development and successful operation, having regard for service, upkeep and financial results such as will put the property in strong position either to be leased to a new tenant after 1927 or be financed and operated by the city.

There is more than good prospect that dividends at 4 per cent per annum will be inaugurated on Pittsburgh and West Virginia Railway common stock within a couple of weeks. At a recent board meeting the proposition was brought forward by George P. Smith, one of the directors. It was the consensus that the fiscal position of the company should be considered first as to capital requirements, and second, to make certain that payment of dividends would not require subsequent borrowing for cash needs. On motion, the matter was referred to the executive committee with directions to make report back to the board, if possible within a week. Such general expression as there was seemed to be favorable to a dividend.

Oil Operations of Cities Service Company in November

Up to the present writing approach of winter weather has not had material effect on the oil operations of Empire Gas & Fuel Company. Work in the fields was carried on quite satisfactorily during November, and production was held at a gratifying point. New completions in the Virgil Field in Kansas have proved up additional acreage held by the Empire Company in that region. The latest developments in the Teeter district have extended production three-quarters of a mile to the south. The Empire Company is well represented in this section. Five wells have already been completed on lot No. 181 on the Osage Reservation. This property was purchased by the Midland Oil Company, a proprietary company of Empire Gas & Fuel Company, at the last sale of Indian land. This production adds about 400 barrels flush production to the daily output. With the completion on well No. 5 on the Stevenson lease, southwest of Breckenridge in Stephens County, Texas, production on this lease exceeds 1,000 barrels daily. Three additional wells are now being drilled. Activities are being increased in the Hull district and results have been most encouraging.

Recent operations by Indian Territory Illuminating Oil Company, subsidiary of Empire Gas & Fuel Company, operating in the Osage Reservation, have enabled the Indian Territory Illuminating Company to bring its production to over 1,500 barrels daily. The Edgar Oil Company, an affiliated company, has been very successful in the developing of its holdings in Ofuskee County, Okla., where the company has brought in several wells. Initial production of each well exceeded 500 barrels. Tank wagon station sales for the month of November showed substantial increases over the corresponding month for 1919, this probably resulting from the open winter or the increased number of commercial vehicles now in use. The Margaret Hall, a larger stern wheel towboat recently purchased and overhauled, is now on her way to Tampico, Mexico. This towboat will be used on the Panuco River to transport Panuco crude oil to tidewater.

The public service division reported satisfactory conditions. Combined gross and combined net earnings of the various operating companies were greater for the month of November, 1920, than they were for the month of October, while the month of October showed greater improvement in net earnings than any other one month in the history of the company. The effect of increased rates is being felt in a number of properties and is placing the companies on an improved net earning basis. Several additional rate increases were granted during the month of November. Notably among these were the increases granted Meridian Light & Railway Company, operating in Meridian, Miss., where the Federal court allowed an increase in the gas and electric rates and in Boulder, Col., where the city council, by unanimous vote, allowed the Western Light & Power Company a 10-cent street car fare.

Wakefield Keeps Town Gas Plant

Wakefield, Mass., voters favoring the sale of the municipal light works failed to get the necessary two-thirds majority of votes at the special town meeting held for the purpose of deciding the fate of the municipal gas plant. The ballot, taken after a spirited debate lasting two hours, showed 300 favoring the sale and 211 opposed. Consequently, unless the matter is reconsidered, the town is committed to continue the service.

A special committee, headed by George A. Cowdrey, reported unanimously in favor of selling. They said that the town has lost $134,000 in addition to the loss by the consumers through the high rates. They submitted a proposal from the Malden & Melrose Company to make an inventory of the plant and to make an offer for the works and the franchise. The company offered to supply gas at $1.50, the present rate in the six cities and towns supplied by them, in contrast to the $2.20 rate charged by the town.

Former Senator Charles A. Dean led the opposition. Out of the 48,022 voters in the town only 521 attended the meeting. There now remains for the town two alternatives —either the plant may be rehabilitated at an additional expense, or the gas may be purchased from the Malden & Melrose Company. Neither of these methods, according to the special committee's report, would mean any reduction in price.

Lone Star Gas

Directors of the Lone Star Gas Company, Dallas, Texas, have called a special meeting of its stockholders, to be held on Dec. 20, for the purpose of voting on a proposal to increase its capital stock from $10,000,000 to $11,000,000 and to provide for the issuance of stock required for that object in such manner as the company's stockholders and its directors may decide. No decision as to what plan will be followed has been made. The increase is understood to be for the purpose of enlarging the company's pipe line facilities.

New Rate Schedule Allowed

The Sandusky City Commission has granted the Sandusky Gas & Electric Company, Sandusky, Ohio, an increase in natural gas rates, as follows:

First	2,000 cu. ft.	63 cents
Next	3,000 cu. ft.	68 cents
Next	5,000 cu. ft.	73 cents
All over	10,000 cu. ft.	78 cents

The prices above are subject to a discount of 3 cents per thousand cubic feet if paid within ten days after bill is rendered. Previous to the granting of the increased rates, the rate was 50 cents per thousand cubic feet for all gas consumed. The sliding scale upward tends to economy in consumption.

The employees of the Sandusky Gas & Electric Company read approximately 6,000 gas meters in two days on Dec. 1 and 2, this being made necessary on account of the increase in gas rate allowed by the city which became effective Dec. 1.

Carlisle Gas & Water Co. Contracts for Extensive Improvements

Extensive improvements to its gas plant are being made by the Carlisle Gas & Water Company of Carlisle, Pa. The contract was awarded to the U. G. I. Contracting Company of Philadelphia, and includes new carbureted water gas apparatus of the U. G. I. cone top type, blowing plant with a complete new blast pipe system for all sets, relief holder repairs and remodeling and changes to yard connections.

With these improvements the Carlisle management will greatly increase its facilities for serving its consumers.

Pittsburgh Chamber of Commerce Would Cut Off all Gas for Factories

That the Public Service Commission prohibit the use of natural gas in industries in the Pittsburgh district between next Jan. 1 and April 1 and between Nov. 1 and April 1 each succeeding year thereafter, is recommended by the committee on suggestions and recommendations of the Pittsburgh Chamber of Comber of Commerce.

This action is made necessary by the acute gas shortage facing domestic consumers in this territory. Figures furnished by the Natural Gas Association of America, which is the clearing house of gas companies, show that in 1919 42,419,-483,000 cu. ft. of natural gas were used by local industries, as against 41,049,081,000 cu. ft. used by all domestic consumers here.

These statistics include only the natural gas furnished by companies operating under the jurisdiction of the Public Service Commission. In addition, the industries used many billion cubic feet of artificial gas furnished by privately owned companies.

The Public Service Commission recently decreed that industries should pay the same rates as those charged domestic consumers, ranging in price from 47 cents to as low as 25 cents per thousand cubic feet, instead of the half rate formerly enjoyed by the big plants. Although this order was put into effect, persons in close touch with conditions express the belief that his action will bring no relief to domestic consumers.

Gas companies operating in Ohio found themselves facing a serious problem a year ago concerning the supply of natural gas which their domestic consumers would use. Purely as a conservation measure, the companies increased the rates to industrial consumers to 60 cents per 1,000 cu. ft. and shut off the entire supply to the plants between Oct. 15 and April 15. They then fixed the rates to domestic consumers between 45 cents and 55 cents. This plan is a success.

Many of the mills and industries in the Pittsburgh district are prepared to have their natural gas supply shut off in the winter months, and the big companies will then use by-product of producers' gas or oil.

The resolutions adopted by the Chamber of Commerce are:

"Whereas, A serious shortage of natural gas exists in the city of Pittsburgh and vicinity, causing serious discomfort and suffering in the winter months, especially in the homes of the poor classes, and

"Whereas, Practically all homes of this district are equipped in whole or in part for the use of natural gas, the investment for such equipment representing a vast amount of money, and

"Whereas, The supply of natural gas for domestic consumption can be greatly improved, or probably brought up to a point of normal sufficiency by an order from the Public Service Commission of Pennsylvania, requiring the mills and industries of this district to discontinue the use of natural gas for industrial purposes, such consumption being an unwarranted use of a fuel, which, by every consideration of right, propriety and established equity in pub lic service procedure, should be first utilized to meet the full requirements of domestic consumers, and

"Whereas, The mills and industries of Pittsburgh, and vicinity, as shown by the statistics for the year 1919, are actually consuming as much, if not more, natural gas than is used by all the domestic consumers of said district, thereby causing serious shortage of gas for domestic consumption,

"Therefore, Be it resolved by the Chamber of Commerce of Pittsburgh, that immediate action be taken to correct said serious shortage of natural gas for domestic purposes by calling upon the Public Service Commmission of the State of Pennsylvania to take immediately such action as may be necessary to prohibit the use of natural gas for industrial purposes between Jan. 1, 1921, and April 1, 1921, and thereafter between Nov. 1 and April 1 of each succeeding year.

"Be It Further Resolved, That the Chamber of Commerce of Pittsburgh direct its counsel to take such action in the premises as shall be necessary to accomplish the purpose of these resolutions."

Rocky Mount to Increase Output

Extensive improvements, which wwill quadruple its daily output are now under way a' the Rocky Mount, N. C., gas plant, one of the three municipally owned plants in the State. The present improvements necessitate an expenditure of $74,000.

Authority to Fix Rates Lost by P. S. Commission

The gas companies of Brooklyn and of New York have been elevated beyond the jurisdiction of the Public Service Commission by the Federal courts in the matter of tariff regulations and now enjoy the prerogative of fixing their own rates, according to Secretary James Blaine Walker of the commission.

The commission is seeking some means of having recent increases set aside, Mr. Walker said, but due to the ambiguous rulings of various Federal courts there now is no properly constituted authority with power to fix rates other than the companies themselves.

One of the affected corporations, the Kings County Lighting Company, recently increased its rates from 95 cents to $1.50, based on a ruling by Judge Hough. The increase, decided upon by the company without other specific authority, went into effect on Oct. 22, but the commission held it up for thirty days, as it is permitted to do by law, and an effort now is being made to find a legal way permanently to invalidate the increase, Mr. Walker said.

In the meanwhile consumers served by the company have been notified not to pay the increase for the month of October. Those who have paid have recourse in law, it is pointed out.

However, due to the singular situation created by the Federal courts in their adjudication of the petitions of the several companies, even if the increase is invalidated, there is no properly constituted body with power to fix a substitute rate, and Mr. Walker says frankly that he does not see how this difficulty is to be obviated.

In the case of the Consolidated Gas Company Judge Learned Hand ruled that where existing rates are declared to be confiscatory and yet where no new wrate is fixed by the courts the companies hold the right to fix their own tariffs. Following this decision, the rates of the Kings County Lighting Company, with other companies, were declared to be confiscatory, and no new tariffs were fixed by the courts.

Based on this situation the Kings County Company promptly advanced its rates to $1.50. The Public Service Commssion, though fighting the increase, is without power to fix a substitute tariff under the ruling of Judge Hand. The referee named by

Judge Hough to hear the petition of the company reported that an increase to $1.17 would mean a return of 8 per cent on operations.

Mr. Walker also said that should the statutory candlepower requirement be enforced it would mean that a large proportion of the company's consumers would be entirely without gas, with widespread suffering this winter as a result. The Public Service Commission contends that it is better for all consumers to obtain a poor quality of gas than for a great many to go entirely without in order that a few might receive the benefit of improved quality.

Oil and Gas Can Be Piped, States West Virginia Court

The West Virginia Supreme Court has knocked out the portion of the West Virginia oil and gas transportation privilege tax, applying to interstate business, but sustains statute as extending to intrastate business.

Oil and gas can thus be piped into Pennsylvania, Ohio and other States without the imposition of this special tax provided for in the last extraordinary session of the legislature.

Pittsburgh industries are vitally concerned as well as domestic consumers in western Pennsylvania.

The law applied to piping for distances longer than 10 miles at so much per barrel for oil and so much per thousand feet for gas. In its practical effects this law was intended to stop the shipment of gas particularly out of the State, and at the time of its passage Ohio and Pennsylvania authorities made every possible move to upset it without result. The tax cannot be imposed on pipe lines going through this State from the Oklahoma fields points.

New Manager for Grand Haven Gas Company

F. E. Mason has arrived from Waukegan, Ill., to take up his duties as manager of the Grand Haven Gas Company to succeed J. E. Spindle, who resigned recently. Mr. Mason has had ten years' experience in the gas business, with the W. A. Baehr Gas Syndicate at Waukegan and with the Gas & Electric Improvement Company of Fort Madison, Iowa. He is an ex-service man and was overseas with the Eighty-seventh Division, A. E. F.

Louisville Must Mix Gas to Keep Up Supply

Permission has been granted the Louisville (Ky.) Gas & Electric Company to turn artificial gas into the mains pending the passage of an ordinance fixing rates.

The gas company will have to furnish this artificial gas at the same price as that fixed for natural gas, however, City Attorney Lawton said, until the ordinance is passed and the rates established.

What these artificial gas rates will be Mr. Lawton said he did not know, but he has drawn up a tentative schedule of rates as folows:

For consumers of from 5,000 to 10,000 cu. ft. of gas per month the increase in price will be 10 cents per thousand; for consumers of between 10,000 and 15,000, an increase of 15 cents; 15,000 to 20,000 ft., 40 cents; 20,000 to 50,000 ft., 70 cents. The increase for users of between 50,000 and 100,000 cu. ft. of gas per month has not been estimated, Mr. Lawton said, but users of more than 100,000 cu. ft. of gas per month will have to pay an increase of 90 cents per 1,000 cu. ft. for it.

A statement of the gas company asking the mayor to permit the use of artificial gas says that 38 per cent of the consumers will be affected by the new rates for mixed gas, leaving 62 per cent of the company's patrons, approximately 28,400 in number, who use less than 5,000 cu. ft. of gas a month.

The large consumers, the statement says, are responsible for the shortage now existing and "it is only fair that they should bear the burden."

The cost of operating the artificial gas plant, the company's statement said, is $51,600 per month, or $1.15 per thousand cubic feet. This cost figure is exclusive of interest, depreciation and taxes, the company's statement says, and the company further says that it is willing to furnish the artificial gas thus manufactured at actual cost of production, absorbing the loss of interest, depreciation and taxes itself.

Should the gas pressure fall below the required three ounces to the square inch a reserve supply of 3,000,000 cu. ft. of artificial gas is now in the containers of the company ready to be turned into the mains.

The artificial plant is now running manufacturing a small quantity of gas to test the machinery and to familiarize the employees with the plant.

Heating units of the artificial gas shall not be fewer than 550 B.t.u., and when mixed the product shall not contain less than 950 heating units. Purity of the gas shall comply with standard regulations of the Bureau of Standards, according to the ordinance.

Patrick Coyle, Superintendent of Charlestown G. & E., Dies

Patrick Coyle, superintendent of the Charlestown (Mass.) Gas & Electric Company, died at his home, 27 Arlington Avenue, Dec. 10. He had been employed by the company fifty-eight years.

Mr. Coyle was born in Tyrone County, Ireland, and came to America with his parents when seven years of age. The family first settled in New Brunswick, and later removed to Charlestown. After graduating from the Bunker Hill Grammer School he entered the employ of the Charlestown Gas Company.

For half a century Mr. Coyle was in the service of that company, rising from the ranks to be one of the highest officials. In 1893 he had attained the superintendency of the Charlestown Gas & Electric Company.

In 1886 he was elected a member of the old Common Council and from that time on his place in Charlestown olitics became increasingly notable. He became a member of the Democratic city committee and was frequently a delegate to party conventions, both State and local.

Travis H. Whitney Joins the Kings County Lighting Company

Travis H. Whitney, former Public Service Commissioner, has become associated with Ralph Elsman, president of the Kings County Lighting Company, and will assist in the management of this enterprise. Mr. Whitney says he is interested in Elsman's scheme to establish a community of interest between the company, its employees and subscribers.

Brighter Outlook for Gas Companies

Plans are being formulated for relief of gas companies and to enable them to supply consumers this winter. Gas companies as a whole have not given the same relief as electric companies, although their plight is now being given better consideration.

In New York subsidiaries of Consolidated Gas Company and Brooklyn Union Gas Company were authorized by court to increase rates to $1.10 Dec. 1, until trial of suits in stituted by companies to have statutory rates declared unconstitutional. In Philadelphia an ordinance has been passed by city council for appointment of expert commission to study the situation with view to ameliorating conditions pressing down on United Gas Improvement Company. In Philadelphia rate to consumers is $1, but United Gas Improvement Company, which leases gas works from the city, pays 25 cents out of each dollar collected to the city, so that in view of present high costs the company is operating the city gas works at loss of about $10,000 per day.

Relief for gas companies has been sought in various ways; by increase in rates; by request to oil companies to set aside enough oil to take care of gas companies, as they are facing an oil shortage which may force some companies out of business the coming winter; by change from lighting to heating standard which will lessen consumption of oil by gas companies throughout the country; where heating standard is in effect, by reduction in number of heating units and by restoration of car consignments for gas companies.

Gas companies contract for their supply of coal but until the Commerce Commission some time ago assigned cars for their use they were able to get only 50 per cent of their contract coal and had to purchase the balance in the market and pay heavy premiums for spot deliveries. These car assignments were recently annulled by the Commerce Commission, and returns from 3,000 utility companies throughout country indicate that since the annulment they have received only 47 per cent of car requirements and have been drawing 53 per cent of current needs from stored supplies. Unless car assignments are restored, gas officials declare some gas companies will not get through the winter. Some companies which had sixty days' supply of coal are now down to thirty days' supply.

One possibility receiving attention is that rates may be established similar to railway service at cost plan, so that rates would advance from fixed base as price of coal and labor and other costs advanced, and rates would be reduced as prices for commodities and labor were lowered. Such action may be advocated to give greater stability to the industry and to attract additional capital, in order that investors may feel that gas companies will never again be faced with abnormal conditions such as experienced during the trying days of the past few years.

Lynn G. & E. Employees Give Farewell Dinner to Fellow Worker

The members of the Lynn (Mass.) Gas & Electric Company Employees Association tendered a farewell reception to William A. Anderson, a foreman in the company for eighteen years, in their clubrooms on Broad Street, Lynn, Mass. Mr. Anderson will leave for a four months' stay with his son in San Francisco.

Fully 200 workers attended the affair and gave "Billy" a send off that will always be a pleasant memory to the man who is honored, loved and respected by every one connected with the works from President Bartlett down to the office boys.

The crowd assembled at 6.30 o'clock and a fine suppr was served. When the inner man was satisfied an entertainment was given by excellent performers. Featured was an old-fashioned "breakdown" danced by Patsy Hines, the grand old man of the gas works, and Mr. Anderson. Their combined ages total nearly 150 years and they danced as nimbly as some of the young folks.

Mr. Anderson sang "Old Black Joe." Despite his 73 years he posessss a remarkably fine alto voice that rings clear as a bell. The crowd joined in the chorus. Paddy Hines recited several of his own poems. The poem "I'm the Only Tin Can on the Dump; I'm Stationed at the Gate," in which he tells of his duties as watchman at the gate of the Sea Street works, brought down the house.

A communication from Eugene Fraser, treasurer of the company, was read. He expressed his regrets at being unable to attend because of a previous important engagement. He paid a glowing tribute to "Billy" and wished him the best of health and a safe journey and expressed his hope that he will soon return to the service of the company.

Cities Service Co. Declares Dividends

Cities ervice Company has declared regular monthly cash dividends of one-half of one per cent on the preferred stock, the preference "B" stock and the common stock, and the regular monthly dividend of 1¼ per cent on common stock payable in common stock at par, all dividends being payable February 1, 1921, to stocks of record Janury 15, 1921.

Kings County Bond Issue Authorized

On recommendation made by Deputy Public Service Commissioner Morgan T. Donnelly for the issuance of $2,000,000 in 8 per cent cumulative preferred stock by the Kings County Lighting Company, the Public Service Commission on Dec. 16 gave formal sanction to the issue.

Of the proceeds from the sale the company is ordered to expend $1,750,000 for the improvement of its plant, including the installation of additional water gas generating sets, a blowing plant, additional oil piping system, purification apparatus and necessary minor equipment. It is also to be used to make necessary structural changes in buildings, increasing the gas storage holder facilities making necessary additions to its present distribution system and to procure 4,500 gas meters and 200,000 ft. of gas service piping, all to enable it to meet the pressing needs of its consumers. The order authorizes the use of $250,000 for working capital.

President Elsman recently announced that the stock would be offered to residents in the territory served by the company with a view toward making it an enterprise in which the consumers would to some extent have a voice in the management.